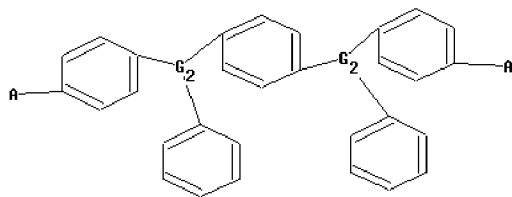


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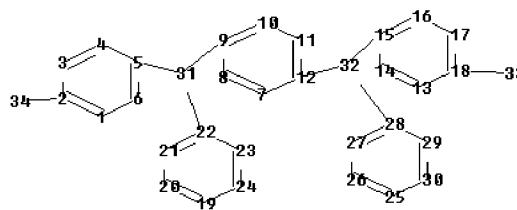
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Uploading C:\Program Files\STNEXP\Queries\10582459#1.str



G<sub>2</sub>-Hy-G<sub>2</sub>



42-39-40

chain nodes :

31 32 33 34 39 40 42

ring nodes :

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23  
24 25 26 27 28 29 30

chain bonds :

2-34 5-31 9-31 12-32 15-32 18-33 22-31 28-32 39-40 39-42

ring bonds :

1-2 1-6 2-3 3-4 4-5 5-6 7-8 7-12 8-9 9-10 10-11 11-12 13-14 13-18 14-15  
15-16 16-17 17-18 19-20 19-24 20-21 21-22 22-23 23-24 25-26 25-30 26-27  
27-28 28-29  
29-30

exact/norm bonds :

2-34 5-31 9-31 12-32 15-32 18-33 22-31 28-32 39-40 39-42

normalized bonds :

1-2 1-6 2-3 3-4 4-5 5-6 7-8 7-12 8-9 9-10 10-11 11-12 13-14 13-18 14-15  
15-16 16-17 17-18 19-20 19-24 20-21 21-22 22-23 23-24 25-26 25-30 26-27  
27-28 28-29  
29-30

isolated ring systems :

containing 1 : 7 : 13 : 19 : 25 :

G1:Ak,H

G2:N,P

G3:B,X

Match level :

1:Atom 2:Atom 3:Atom 4:Atom 5:Atom 6:Atom 7:Atom 8:Atom 9:Atom 10:Atom  
11:Atom 12:Atom 13:Atom 14:Atom 15:Atom 16:Atom 17:Atom 18:Atom 19:Atom  
20:Atom 21:Atom  
22:Atom 23:Atom 24:Atom 25:Atom 26:Atom 27:Atom 28:Atom 29:Atom 30:Atom  
31:CLASS 32:CLASS  
33:CLASS 34:CLASS 39:Atom 40:CLASS 42:CLASS

Generic attributes :

39:

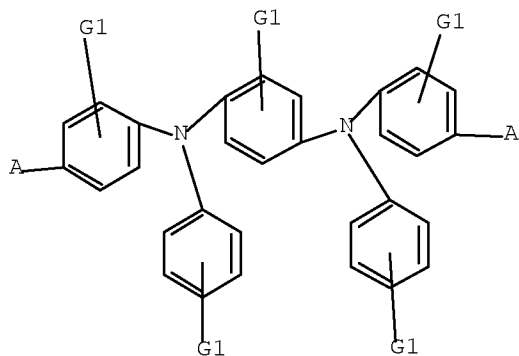
Saturation : Unsaturated

L1            STRUCTURE UPLOADED

=> d l1

L1 HAS NO ANSWERS

L1            STR



G1 Ak,H

Structure attributes must be viewed using STN Express query preparation.

=> s l1

SAMPLE SEARCH INITIATED 14:28:49 FILE 'REGISTRY'

SAMPLE SCREEN SEARCH COMPLETED -            497 TO ITERATE

100.0% PROCESSED            497 ITERATIONS

50 ANSWERS

INCOMPLETE SEARCH (SYSTEM LIMIT EXCEEDED)

SEARCH TIME: 00.00.01

FULL FILE PROJECTIONS:    ONLINE    \*\*COMPLETE\*\*

                             BATCH    \*\*COMPLETE\*\*

PROJECTED ITERATIONS:            8603 TO        11277

PROJECTED ANSWERS:                1114 TO        2206

L2            50 SEA SSS SAM L1

=> s l1 full

FULL SEARCH INITIATED 14:28:57 FILE 'REGISTRY'

FULL SCREEN SEARCH COMPLETED -            9757 TO ITERATE

100.0% PROCESSED            9757 ITERATIONS

1783 ANSWERS

SEARCH TIME: 00.00.01

L3            1783 SEA SSS FUL L1

.

This file contains CAS Registry Numbers for easy and accurate substance identification.

```

=> s 13
L4      1050 L3

=> s 13 and electrolumin?
      1050 L3
      100932 ELECTROLUMIN?
L5      440 L3 AND ELECTROLUMIN?

=> s 15 and suz?
      11754 SUZ?
L6      6 L5 AND SUZ?

=> d ibib abs hitstr 1-6

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L6  ANSWER 1 OF 6  CAPLUS  COPYRIGHT 2010 ACS on STN
ACCESSION NUMBER:      2007:1300534  CAPLUS  Full-text
DOCUMENT NUMBER:      147:542520
TITLE:                 Polymers containing 9,9-dimethylfluorene for use in
                        optoelectronic devices
INVENTOR(S):           Conway, Natasha; Grizzi, Ilaria; Towns, Carl
PATENT ASSIGNEE(S):    CDT Oxford Limited, UK
SOURCE:                PCT Int. Appl., 36 pp.
                        CODEN: PIXXD2
DOCUMENT TYPE:         Patent
LANGUAGE:              English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

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PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2007129015	A1	20071115	WO 2007-GB1420	20070419
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BH, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KN, KP, KR, KZ, LA, LC, LK, LR, LS, LT, LU, LY, MA, MD, MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RS, RU, SC, SD, SE, SG, SK, SL, SM, SV, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, ZA, ZM, ZW				
RW: AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, LV, MC, MT, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG, BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
GB 2440934	A	20080220	GB 2006-8499	20060428
GB 2440934	B	20091216		
EP 2016112	A1	20090121	EP 2007-732462	20070419
R: AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LI, LT, LU, LV, MC, MT, NL, PL, PT, RO, SE, SI, SK, TR, AL, BA, HR, MK, RS				
JP 2009535795	T	20091001	JP 2009-507140	20070419
CN 101448869	A	20090603	CN 2007-80018370	20081119
KR 2009005224	A	20090112	KR 2008-728993	20081127
US 20090322213	A1	20091231	US 2009-298239	20090224
PRIORITY APPLN. INFO.:			GB 2006-8499	A 20060428
			WO 2007-GB1420	W 20070419

ASSIGNMENT HISTORY FOR US PATENT AVAILABLE IN LSUS DISPLAY FORMAT

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AB  A polymer for use in an optoelectronic device comprises aromatically
    conjugated repeating units of optionally substituted 9,9-dimethylfluorene. The
    polymer has improved thermal stability and longer life time compared to prior

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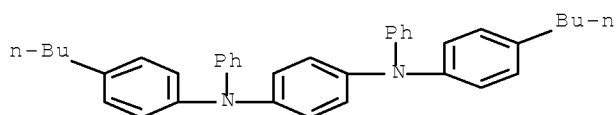
art polymers containing 9,9-dioctylfluorene, 9,9-diphenylfluorene and N,N'-bis(4-butylphenyl)-N,N'-diphenyl-1,4-benzenediamine units, and can be used in blue-emitting electroluminescent devices.

IT 423774-96-3D, Suzuki-coupled diphenylfluorene- and dioctylfluorene- and dimethylfluorene-containing polymers  
RL: PRP (Properties); TEM (Technical or engineered material use); USES (Uses)

(polymers containing 9,9-dimethylfluorene for use in optoelectronic devices)

RN 423774-96-3 CAPLUS

CN 1,4-Benzenediamine, N1,N4-bis(4-butylphenyl)-N1,N4-diphenyl- (CA INDEX NAME)



OS.CITING REF COUNT: 1 THERE ARE 1 CAPLUS RECORDS THAT CITE THIS RECORD (1 CITINGS)

REFERENCE COUNT: 5 THERE ARE 5 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L6 ANSWER 2 OF 6 CAPLUS COPYRIGHT 2010 ACS on STN

ACCESSION NUMBER: 2006:656052 CAPLUS Full-text

DOCUMENT NUMBER: 145:125250

TITLE: Blue-shifted triarylamine polymer for electroluminescent devices

INVENTOR(S): Mckiernan, Mary; Patel, Nalinkumar; Foden, Clare; Leadbeater, Mark; Tierney, Brian; Conway, Natasha

PATENT ASSIGNEE(S): Cambridge Display Technology Limited, UK; CDT Oxford Limited

SOURCE: PCT Int. Appl., 61 pp.

CODEN: PIXXD2

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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WO 2006070184	A1	20060706	WO 2005-GB5056	20051223
W:	AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KN, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, LY, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NG, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SM, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW			
RW:	AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, LV, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG, BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM			
US 20090146164	A1	20090611	US 2008-813180	20081009
PRIORITY APPLN. INFO.:			GB 2004-28445	A 20041229

## ASSIGNMENT HISTORY FOR US PATENT AVAILABLE IN LSUS DISPLAY FORMAT

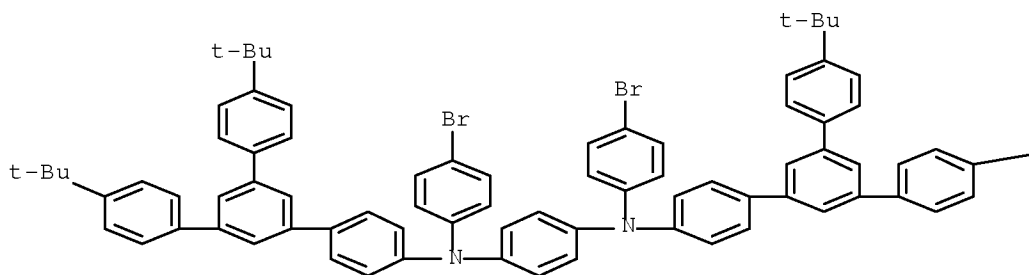
AB A semiconductive conjugated polymer comprises the repeating unit  
 $\text{Ar1N(Ar2)Ar3N(Ar4)Ar5}$ : where Ar1, Ar3, and Ar5 are the same or different and  
 each represent an optionally substituted aryl or heteroaryl group; Ar2 and Ar4  
 are the same or different and each represent a substituted aryl or heteroaryl  
 group; and characterized in that Ar2 and Ar4 sterically interact with one  
 another so as to cause an increase in the bandgap of the polymer. The  
 triarylamine polymers are useful in LEDs.

IT 1057075-34-9  
 RL: PRPH (Prophetic)  
 (Blue-shifted triarylamine polymer for electroluminescent  
 devices)

RN 1057075-34-9 CAPLUS

CN INDEX NAME NOT YET ASSIGNED

PAGE 1-A



PAGE 1-B

—Bu-t

IT 897365-67-2P  
 RL: IMF (Industrial manufacture); TEM (Technical or engineered material  
 use); PREP (Preparation); USES (Uses)  
 (blue-shifted triarylamine polymer for electroluminescent  
 devices)

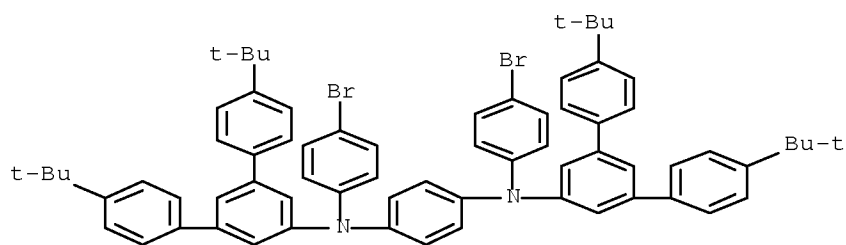
RN 897365-67-2 CAPLUS

CN 1,4-Benzenediamine, N,N'-bis[4,4'-bis(1,1-dimethylethyl)[1,1':3',1''-  
 terphenyl]-5'-diyl]-N,N'-bis(4-bromophenyl)-, polymer with  
 2,7-dibromo-9,9-dioctyl-9H-fluorene and  
 2,7-dibromo-9,9-diphenyl-9H-fluorene (9CI) (CA INDEX NAME)

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CRN 897365-66-1

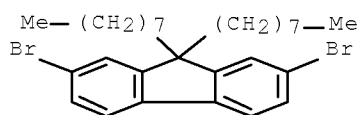
CMF C70 H70 Br2 N2



CM 2

CRN 198964-46-4

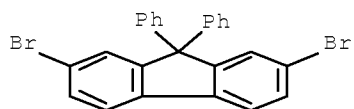
CMF C29 H40 Br2



CM 3

CRN 186259-63-2

CMF C25 H16 Br2

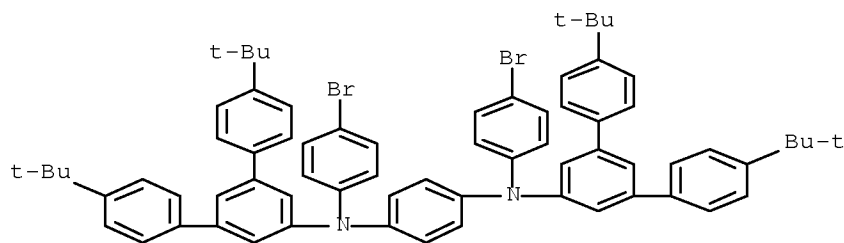


IT 897365-66-1P

RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)  
(monomer; blue-shifted triarylamine polymer for electroluminescent devices)

RN 897365-66-1 CAPLUS

CN 1,4-Benzenediamine, N,N'-bis[4,4''-bis(1,1-dimethylethyl)[1,1':3',1''-terphenyl]-5'-yl]-N,N'-bis(4-bromophenyl)- (9CI) (CA INDEX NAME)



REFERENCE COUNT: 6 THERE ARE 6 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L6 ANSWER 3 OF 6 CAPLUS COPYRIGHT 2010 ACS on STN  
 ACCESSION NUMBER: 2006:151223 CAPLUS Full-text  
 DOCUMENT NUMBER: 144:233620  
 TITLE: Polymers for use in organic electroluminescent devices  
 INVENTOR(S): McKiernan, Mary; Towns, Carl  
 PATENT ASSIGNEE(S): Covion Organic Semiconductors GmbH, Germany  
 SOURCE: PCT Int. Appl., 33 pp.  
 CODEN: PIXXD2  
 DOCUMENT TYPE: Patent  
 LANGUAGE: English  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2006015862	A1	20060216	WO 2005-EP8718	20050811
W:	AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NG, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SM, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW			
RW:	AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, LV, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG, BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM			
EP 1627891	A1	20060222	EP 2004-19030	20040811
R:	AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, PL, SK, HR			
EP 1776404	A1	20070425	EP 2005-787939	20050811
EP 1776404	B1	20080102		
R:	AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LI, LT, LU, LV, MC, NL, PL, PT, RO, SE, SI, SK, TR			
CN 101001901	A	20070718	CN 2005-80026915	20050811
AT 382647	T	20080115	AT 2005-787939	20050811
JP 2008509266	T	20080327	JP 2007-525255	20050811
KR 2007051265	A	20070517	KR 2007-703096	20070208
US 20070252139	A1	20071101	US 2007-659899	20070209
US 7592622	B2	20090922		
US 20090253883	A1	20091008	US 2009-481220	20090609
PRIORITY APPLN. INFO.:			EP 2004-19030	A 20040811

WO 2005-EP8718

W 20050811

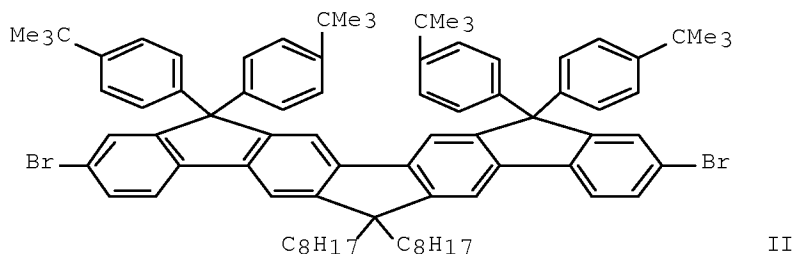
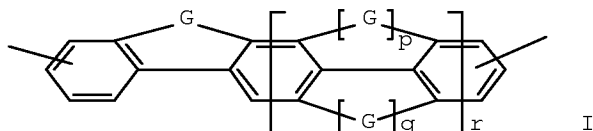
US 2007-659899

A3 20070209

ASSIGNMENT HISTORY FOR US PATENT AVAILABLE IN LSUS DISPLAY FORMAT

OTHER SOURCE(S): MARPAT 144:233620

GI



AB A polymer comprises an optionally substituted first repeat unit, I, where G = divalent residue;  $r \geq 1$ ;  $p, q = 0$  or  $1$ ; and G comprises a heteroatom in the case where  $n$  (sic) = 1. Monomer II (preparation given) could be polymerized forming blue light-emitting copolymer.

IT 876107-80-1F 876107-81-2F

RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)

(polymers based on diindenofluorene monomers for electroluminescent devices)

RN 876107-80-1 CAPLUS

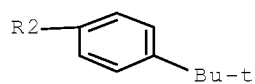
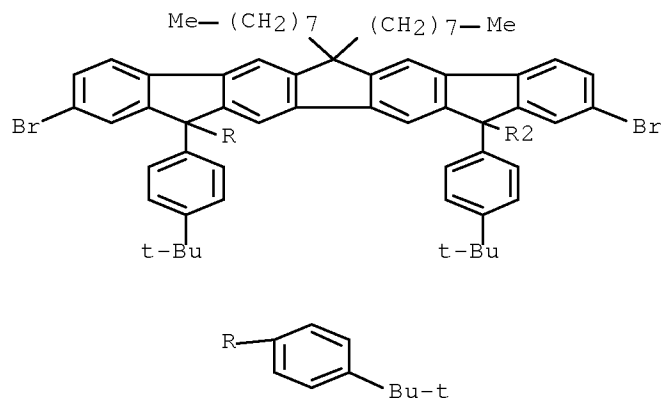
CN 1,4-Benzenediamine, N,N'-bis(4-bromophenyl)-N,N'-bis(4-butylphenyl)-, polymer with 2,10-dibromo-12,12,15,15-tetrakis[4-(1,1-dimethylethyl)phenyl]-12,15-dihydro-6,6-dioctyl-6H-diindeno[1,2-b:2',1'-h]fluorene and 2,2'-[2',3',6',7'-tetrakis(3-methylbutoxy)-9,9'-spirobi[9H-fluorene]-2,7-diyl]bis[1,3,2-dioxaborolane] (9CI) (CA INDEX NAME)

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CRN 876107-73-2

CMF C83 H96 Br2

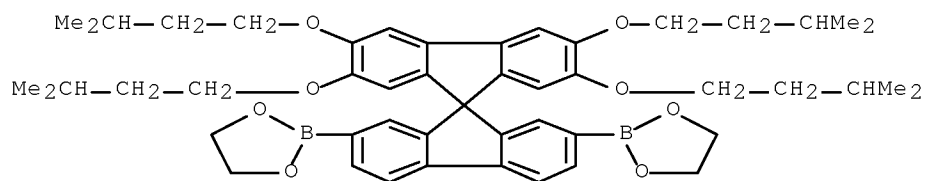




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CRN 807374-60-3

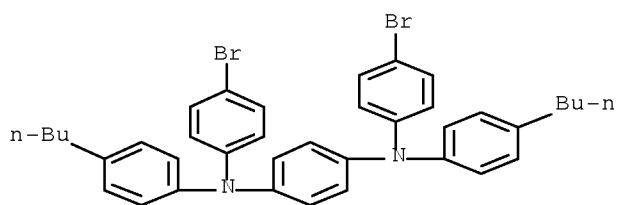
CMF C49 H62 B2 O8



CM 3

CRN 372200-89-0

CMF C38 H38 Br2 N2



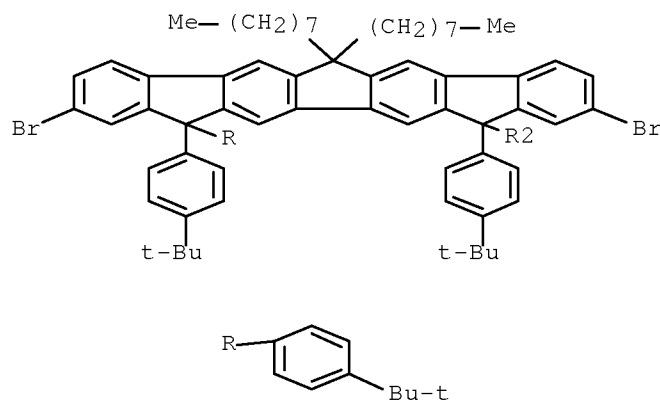
RN 876107-81-2 CAPLUS

CN 1,4-Benzenediamine, N,N'-bis(4-bromophenyl)-N,N'-bis(4-butylphenyl)-, polymer with 2,10-dibromo-12,12,15,15-tetrakis[4-(1,1-dimethylethyl)phenyl]-12,15-dihydro-6,6-dioctyl-6H-diindeno[1,2-b:2',1'-h]fluorene and 2,2'-(6,12-dihydro-6,6,12,12-tetraoctylindeno[1,2-b]fluorene-2,8-diyl)bis[4,4,5,5-tetramethyl-1,3,2-dioxaborolane] (9CI) (CA INDEX NAME)

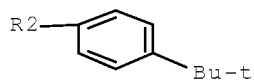
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CRN 876107-73-2

CMF C83 H96 Br2



PAGE 1-A

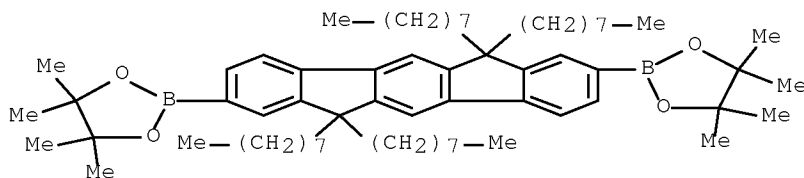


PAGE 2-A

CM 2

CRN 628303-20-8

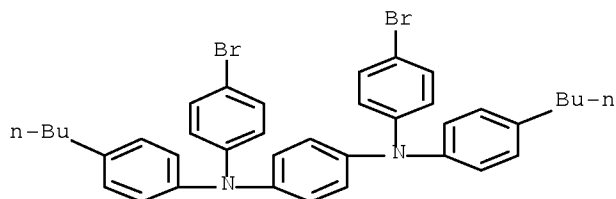
CMF C64 H100 B2 O4



CM 3

CRN 372200-89-0

CMF C38 H38 Br2 N2



OS.CITING REF COUNT: 5 THERE ARE 5 CAPLUS RECORDS THAT CITE THIS RECORD  
(16 CITINGS)  
REFERENCE COUNT: 9 THERE ARE 9 CITED REFERENCES AVAILABLE FOR THIS  
RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L6 ANSWER 4 OF 6 CAPLUS COPYRIGHT 2010 ACS on STN

ACCESSION NUMBER: 2005:1050577 CAPLUS Full-text

DOCUMENT NUMBER: 143:348231

TITLE: White ~~electroluminescent~~ polymeric material  
& preparation thereof

INVENTOR(S): Wang, Lixiang; Tu, Guoli; Cao, Jianxin; Liu, Jun; Ma,  
Dongge; Jing, Xia Bin; Wang, Fosong

PATENT ASSIGNEE(S): Changchun Institute of Applied Chemistry Chinese  
Academy of Science, Peop. Rep. China

SOURCE: U.S. Pat. Appl. Publ., 55 pp.

CODEN: USXXCO

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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US 20050214568	A1	20050929	US 2005-42193	20050126
US 7579091	B2	20090825		
CN 1580179	A	20050216	CN 2004-10010770	20040329
CN 100363458	C	20080123		
CN 101113326	A	20080130	CN 2007-10128962	20040329

CN 101113327	A	20080130	CN 2007-10128969	20040329
CN 100543059	C	20090923		
US 20070270570	A1	20071122	US 2007-779101	20070717
PRIORITY APPLN. INFO.:			CN 2004-10010770	A 20040329
			US 2005-42193	A3 20050126

ASSIGNMENT HISTORY FOR US PATENT AVAILABLE IN LSUS DISPLAY FORMAT  
GI

\* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT \*

AB A white electroluminescent polymeric material is also described comprising a single white electroluminescent polymeric material consisting of type(I) main chain type single white electroluminescent polymeric material by the general formula I, type(II) pendant chain type single white electroluminescent polymeric material by the general formula II, and type(III) terminal group type single white electroluminescent polymeric material by the general formula III (R1 = alkyl, aryl; Ar1 = naphthalimide derivative with basic unit described in the text; R2 = alkyl, alkoxy, Ph and Ph substituted by alkyl or alkoxy; Ar2 = heterocyclic unit described in the text). A process for preparing the white electroluminescent polymeric material is also described entailing (1) providing a monomer selected from a group consisting of monomers with a general formulas IV, V (m = 0-20), VI, and VII; (2) providing a monomer by the general formula VIII and (3) polymerizing the monomers using the Yamamoto polymerization method or the Suzuki polymerization method.

IT 865779-67-5P 865779-70-0P

RL: IMF (Industrial manufacture); PREP (Preparation)  
(white electroluminescent polymeric material and preparation)

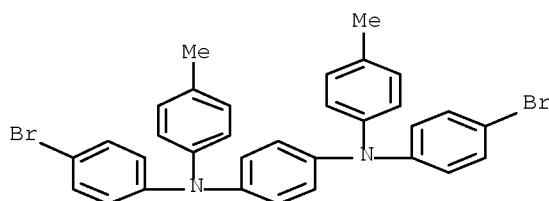
RN 865779-67-5 CAPLUS

CN 1H-Benz[de]isoquinoline-1,3(2H)-dione,  
6-[bis[4-[(4-bromophenyl)(4-methylphenyl)amino]phenyl]amino]-2-[4-(1,1-dimethylethyl)phenyl]-, polymer with  
N,N'-bis(4-bromophenyl)-N,N'-bis(4-methylphenyl)-1,4-benzenediamine and  
2,7-dibromo-9,9-dioctyl-9H-fluorene (9CI) (CA INDEX NAME)

CM 1

CRN 865779-66-4

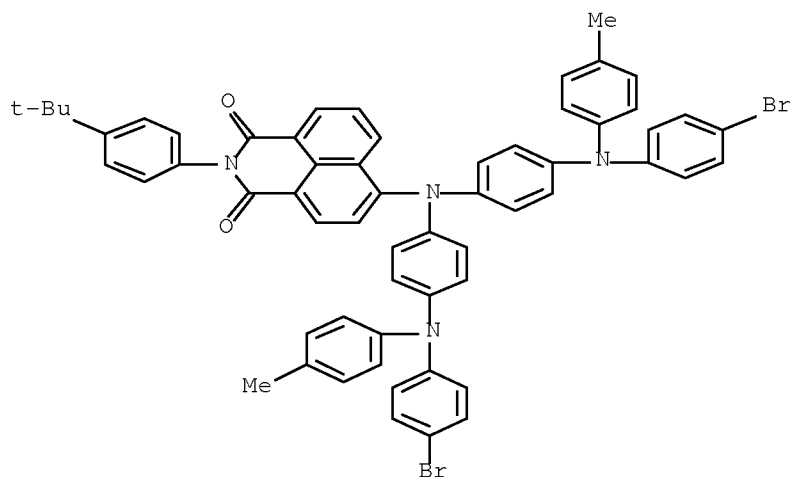
CMF C32 H26 Br2 N2



CM 2

CRN 865779-32-4

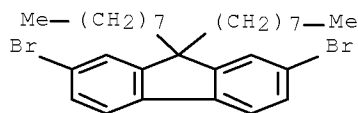
CMF C60 H48 Br2 N4 O2



CM 3

CRN 198964-46-4

CMF C29 H40 Br2



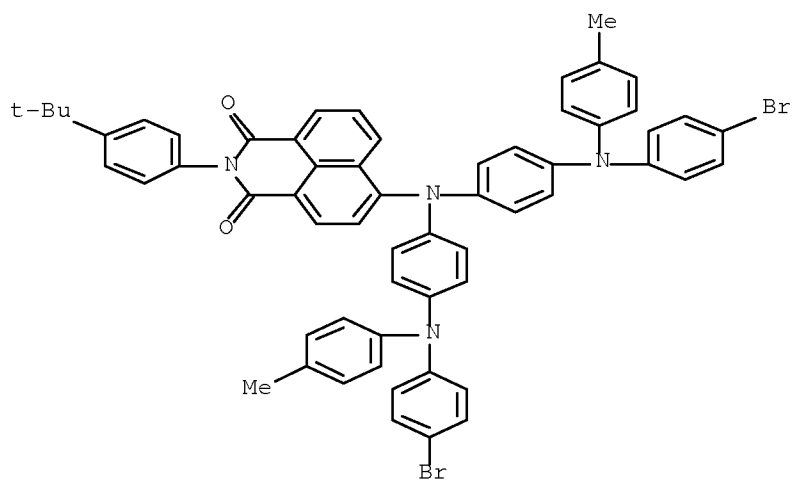
RN 865779-70-0 CAPLUS

CN 1H-Benz[de]isoquinoline-1,3(2H)-dione,  
6-[bis[4-[(4-bromophenyl)(4-methylphenyl)amino]phenyl]amino]-2-[4-(1,1-dimethylethyl)phenyl]-, polymer with 2,7-dibromo-9,9-dioctyl-9H-fluorene  
and 2,2'-(9,9-dioctyl-9H-fluorene-2,7-diyl)bis[1,3,2-dioxaborinane] (9CI)  
(CA INDEX NAME)

CM 1

CRN 865779-32-4

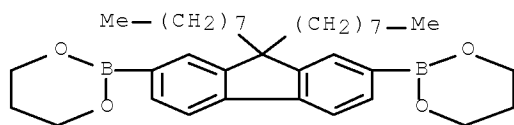
CMF C60 H48 Br2 N4 O2



CM 2

CRN 317802-08-7

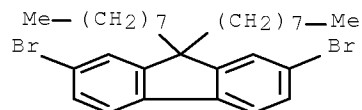
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CM 3

CRN 198964-46-4

CMF C29 H40 Br2

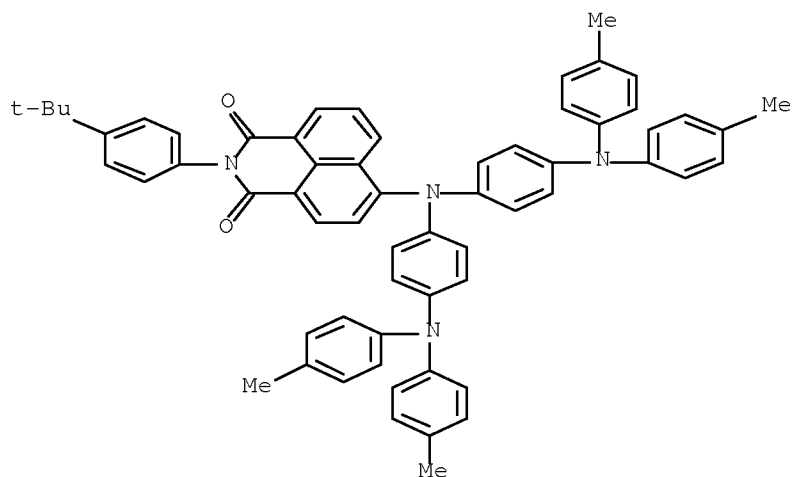


IT 865779-30-2P 865779-32-4P 865779-58-4P  
865779-59-5P

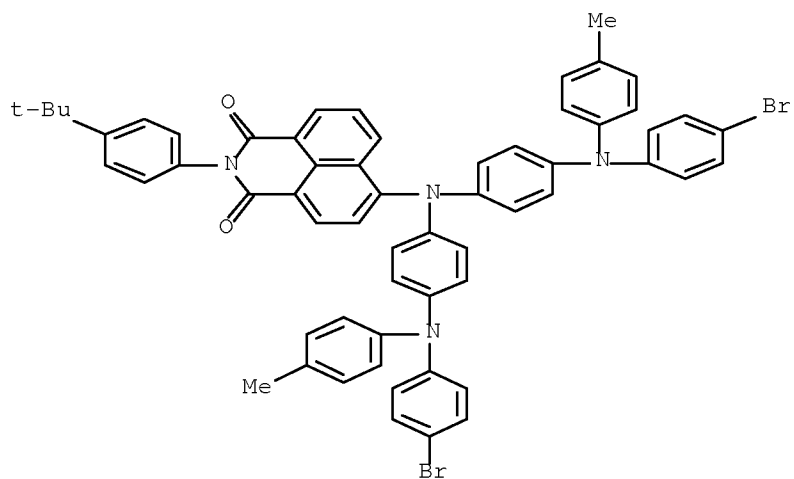
RL: IMF (Industrial manufacture); PRP (Properties); RCT (Reactant); PREP  
(Preparation); RACT (Reactant or reagent)  
(white electroluminescent polymeric material and preparation)

RN 865779-30-2 CAPLUS

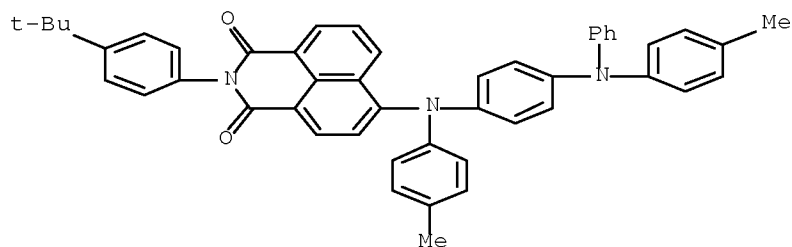
CN 1H-Benz[de]isoquinoline-1,3(2H)-dione,  
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dimethylethyl)phenyl]- (CA INDEX NAME)



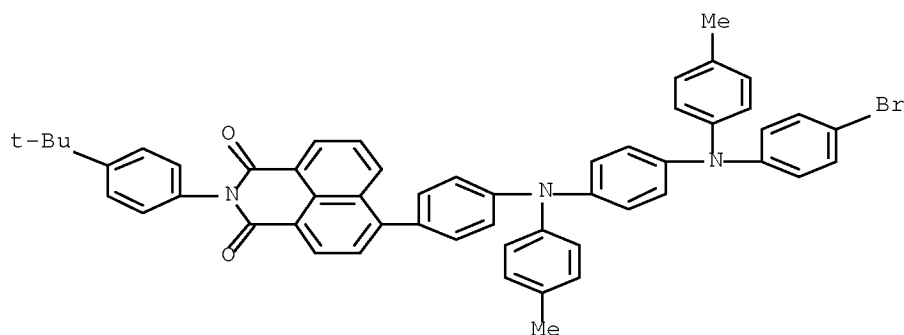
RN 865779-32-4 CAPLUS  
 CN 1H-Benz[de]isoquinoline-1,3(2H)-dione,  
 6-[bis[4-[(4-bromophenyl)(4-methylphenyl)amino]phenyl]amino]-2-[4-(1,1-  
 dimethylethyl)phenyl]- (CA INDEX NAME)



RN 865779-58-4 CAPLUS  
 CN 1H-Benz[de]isoquinoline-1,3(2H)-dione,  
 2-[4-(1,1-dimethylethyl)phenyl]-6-[(4-methylphenyl)[4-[(4-  
 methylphenyl)phenylamino]phenyl]amino]- (CA INDEX NAME)



RN 865779-59-5 CAPLUS  
 CN 1H-Benz[de]isoquinoline-1,3(2H)-dione,  
 6-[4-[[4-[(4-bromophenyl)(4-methylphenyl)amino]phenyl](4-  
 methylphenyl)amino]phenyl]-2-[4-(1,1-dimethylethyl)phenyl]- (CA INDEX  
 NAME)



L6 ANSWER 5 OF 6 CAPLUS COPYRIGHT 2010 ACS on STN  
 ACCESSION NUMBER: 2004:1059414 CAPLUS Full-text  
 DOCUMENT NUMBER: 142:39562  
 TITLE: Manufacture of solution-processable semiconductive  
 polymers with improved hole transporting properties  
 and their use  
 INVENTOR(S): Wallace, Paul  
 PATENT ASSIGNEE(S): Covion Organic Semiconductors G.m.b.H., Germany  
 SOURCE: PCT Int. Appl., 25 pp.  
 CODEN: PIXXD2  
 DOCUMENT TYPE: Patent  
 LANGUAGE: English  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2004106409	A1	20041209	WO 2004-EP5818	20040528
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW				



RW: BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM,  
 AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK,  
 EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE,  
 SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE,  
 SN, TD, TG

EP 1633801 A1 20060315 EP 2004-739446 20040528  
 EP 1633801 B1 20080409

R: DE, FR, GB, NL

CN 1768093 A 20060503 CN 2004-80008649 20040528  
 JP 2007504342 T 20070301 JP 2006-529951 20040528  
 US 20060241202 A1 20061026 US 2006-558578 20060201

PRIORITY APPLN. INFO.:

EP 2003-12409 A 20030530  
 WO 2004-EP5818 W 20040528

ASSIGNMENT HISTORY FOR US PATENT AVAILABLE IN LSUS DISPLAY FORMAT

AB The semiconductive polymers are useful for thin film electronic and optical devices, such as organic light emitting diodes (OLED) and photovoltaic devices, e.g. solar cells and photo detectors. The semiconductive polymers can be obtained by the Yamamoto or Suzuki polymerization method where increase of the number of nitrogen atoms in the backbone of repeat unit of a semiconducting polymer improves its hole transporting capability. Appropriate selection of the polymerizable group of a monomer of a repeat unit enables the monomer to be polymerized by the Yamamoto or Suzuki polymerization which afford greater control over regioregularity of polymers as compared to prior art polymers.

IT 807374-47-6P 807374-61-4P 807374-75-0P

RL: IMF (Industrial manufacture); PRP (Properties); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)

(manufacture of solution-processable semiconductive polymers with improved

hole

transporting properties and their use)

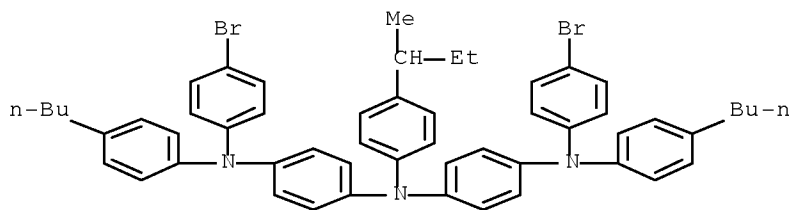
RN 807374-47-6 CAPLUS

CN 1,4-Benzenediamine, N-(4-bromophenyl)-N'-[4-[(4-bromophenyl)(4-butylphenyl)amino]phenyl]-N-(4-butylphenyl)-N'-[4-(1-methylpropyl)phenyl]-, polymer with 2,2'-(6,12-dihydro-6,6,12,12-tetraoctylindeno[1,2-b]fluorene-2,8-diyl)bis[4,4,5,5-tetramethyl-1,3,2-dioxaborolane] (9CI) (CA INDEX NAME)

CM 1

CRN 807374-46-5

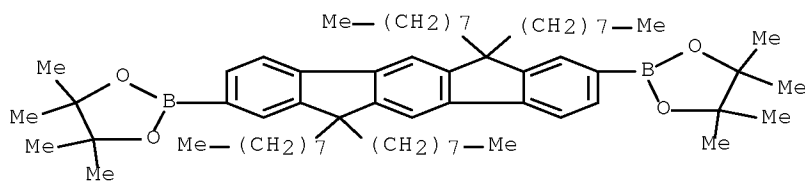
CMF C54 H55 Br2 N3



CM 2

CRN 628303-20-8

CMF C64 H100 B2 O4



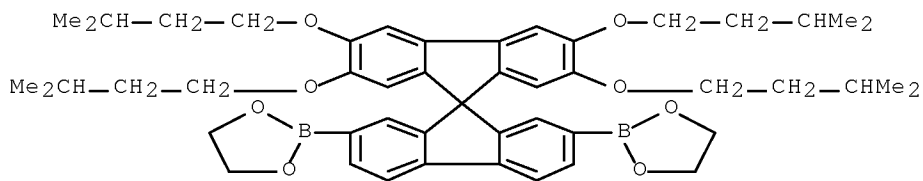
RN 807374-61-4 CAPLUS

CN 1,4-Benzenediamine, N-(4-bromophenyl)-N-(4-butylphenyl)-N'-[4-[(4-bromophenyl)(4-butylphenyl)amino]phenyl]-N'-[4-(1-methylpropyl)phenyl]-, polymer with 2,2'-[2',3',6',7'-tetrakis(3-methylbutoxy)-9,9'-spirobi[9H-fluorene]-2,7-diyl]bis[1,3,2-dioxaborolane] (9CI) (CA INDEX NAME)

CM 1

CRN 807374-60-3

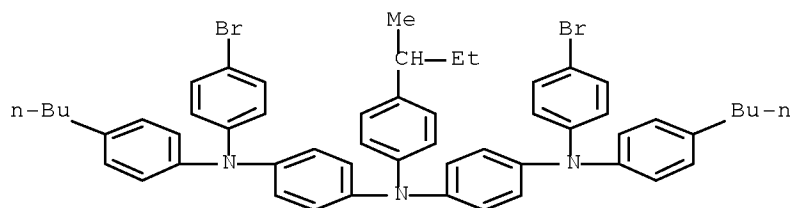
CMF C49 H62 B2 O8



CM 2

CRN 807374-46-5

CMF C54 H55 Br2 N3



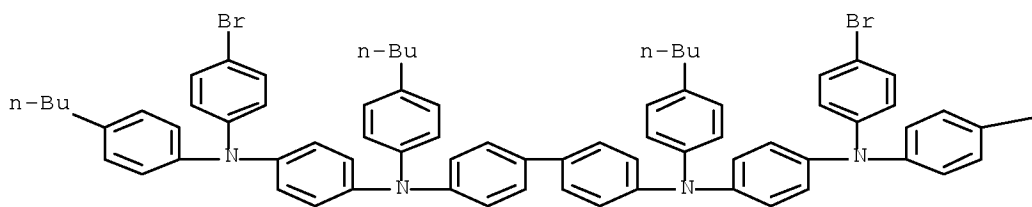
RN 807374-75-0 CAPLUS

CN [1,1'-Biphenyl]-4,4'-diamine, N,N'-bis[4-[(4-bromophenyl)(4-butylphenyl)amino]phenyl]-N,N'-bis(4-butylphenyl)-, polymer with 2,2'-[2',3',6',7'-tetrakis(3-methylbutoxy)-9,9'-spirobi[9H-fluorene]-2,7-diyl]bis[1,3,2-dioxaborolane] (9CI) (CA INDEX NAME)

CM 1

CRN 807374-74-9  
CMF C76 H76 Br2 N4

PAGE 1-A

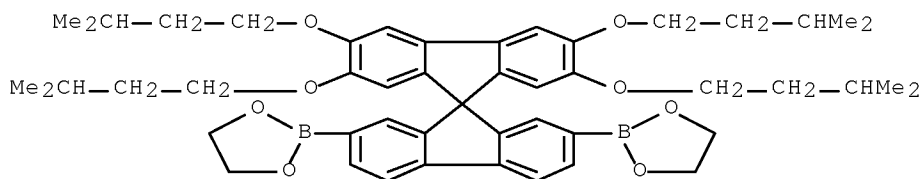


PAGE 1-B

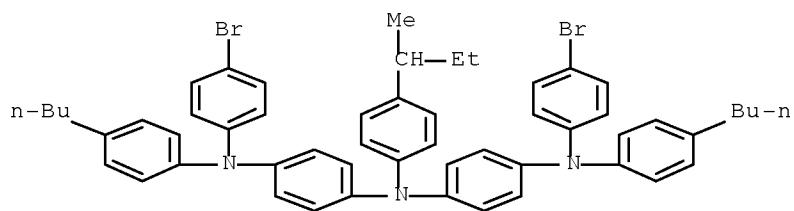
—Bu-n

CM 2

CRN 807374-60-3  
CMF C49 H62 B2 O8



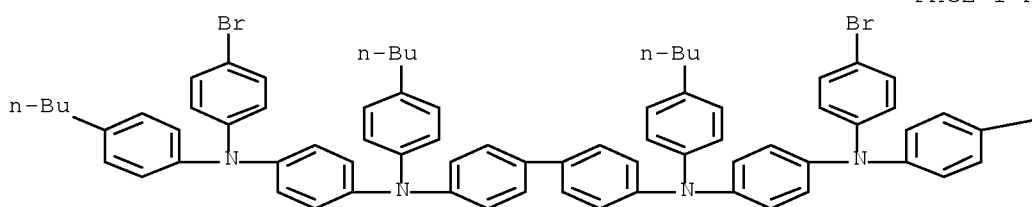
IT 807374-46-5F 807374-74-9F 807374-98-7F  
RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT  
(Reactant or reagent)  
(monomer; manufacture of solution-processable semiconductive polymers with  
improved hole transporting properties and their use)  
RN 807374-46-5 CAPLUS  
CN 1,4-Benzenediamine, N1-(4-bromophenyl)-N4-[4-[(4-bromophenyl)(4-  
butylphenyl)amino]phenyl]-N1-(4-butylphenyl)-N4-[4-(1-methylpropyl)phenyl]-  
(CA INDEX NAME)



RN 807374-74-9 CAPLUS

CN [1,1'-Biphenyl]-4,4'-diamine, N4,N4'-bis[4-[(4-bromophenyl)(4-butylphenyl)amino]phenyl]-N4,N4'-bis(4-butylphenyl)- (CA INDEX NAME)

PAGE 1-A

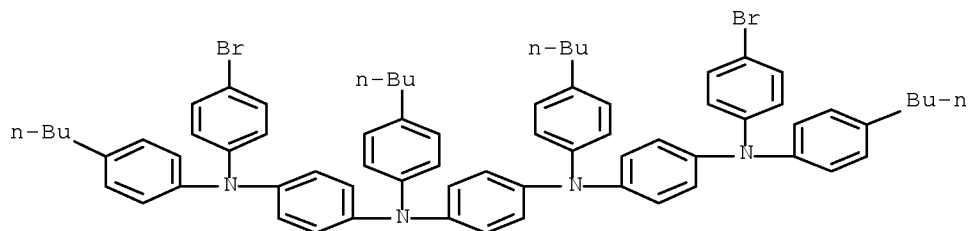


PAGE 1-B

—Bu-n

RN 807374-98-7 CAPLUS

CN 1,4-Benzenediamine, N1,N4-bis[4-[(4-bromophenyl)(4-butylphenyl)amino]phenyl]-N1,N4-bis(4-butylphenyl)- (CA INDEX NAME)



OS.CITING REF COUNT: 6 THERE ARE 6 CAPLUS RECORDS THAT CITE THIS RECORD  
(6 CITINGS)  
REFERENCE COUNT: 9 THERE ARE 9 CITED REFERENCES AVAILABLE FOR THIS

## RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L6 ANSWER 6 OF 6 CAPLUS COPYRIGHT 2010 ACS on STN

ACCESSION NUMBER: 2003:6031 CAPLUS Full-text

DOCUMENT NUMBER: 138:56847

TITLE: Preparation of polymer containing substituted triphenylamine units for optical devices

INVENTOR(S): Towns, Carl; O'dell, Richard

PATENT ASSIGNEE(S): Cambridge Display Technology Limited, UK

SOURCE: PCT Int. Appl., 35 pp.

CODEN: PIXXD2

DOCUMENT TYPE: Patent

LANGUAGE: English

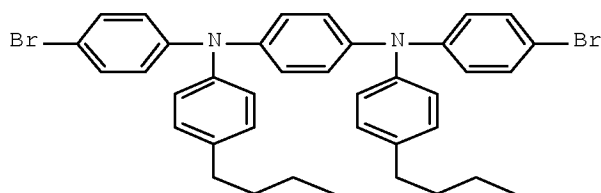
FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2003000773	A1	20030103	WO 2002-GB2803	20020620
W:	AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZM, ZW			
RW:	GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG			
AU 2002314316	A1	20030108	AU 2002-314316	20020620
EP 1397416	A1	20040317	EP 2002-740886	20020620
EP 1397416	B1	20091014		
R:	AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR			
JP 2004532348	T	20041021	JP 2003-507173	20020620
AT 445661	T	20091015	AT 2002-740886	20020620
US 20040254324	A1	20041216	US 2004-481439	20040517
US 7351788	B2	20080401		
JP 2009019207	A	20090129	JP 2008-179260	20080709
PRIORITY APPLN. INFO.:			GB 2001-15348	A 20010622
			US 2001-310580P	P 20010807
			JP 2003-507173	A3 20020620
			WO 2002-GB2803	W 20020620

ASSIGNMENT HISTORY FOR US PATENT AVAILABLE IN LSUS DISPLAY FORMAT

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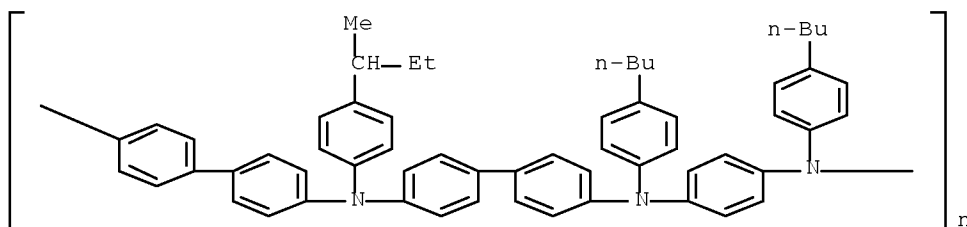
AB The polymer containing a first repeat unit  $-\text{ArN}(\text{R})\text{Ar}-[\text{N}(\text{R}')\text{Ar}]_x-$  ( $x = 0, 1$ ;  $\text{Ar} = (\text{un})\text{substituted aryl or heteroaryl}$ ;  $\text{R}, \text{R}' = \text{H, a substituent}$ ) and a second repeat unit that is the same or different from the first repeat unit and comprises a substituted or unsubstituted, aryl or heteroaryl group is made by ~~Sxxxxi~~ polymerization of (a) a first monomer having the first repeat unit and two reactive boron derivative groups with a second monomer having the second repeat unit and  $\geq 2$  reactive halide functional groups; or (b) a first monomer having the first repeat unit and one reactive halide functional group and one reactive boron derivative group with a second monomer having the second repeat unit and one reactive halide functional group and one reactive boron derivative group in the presence of a base and a catalyst. The polymers are useful for optical devices such as ~~electroluminescent~~ devices. Thus, 4.79 g dibromo-PFB I was mixed with 5 g pinacol diester of PFB boronic acid and 25 mg dichlorobis(triphenylphosphine) palladium in 100 mL toluene and end-capped with bromobenzene and glycol ester of benzeneboronic acid to give 6.3 g polymer with number average mol. weight 23,000.

IT 479517-33-4DF, reaction products with bromobenzene and glycol benzeneboronate 479517-43-6DP, reaction products with bromobenzene and glycol benzeneboronate 479517-48-1DP, reaction products with bromobenzene and glycol benzeneboronate  
 RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)

(preparation of polymer containing substituted triphenylamine units for optical devices)

RN 479517-33-4 CAPLUS

CN Poly[[ (4-butylphenyl)imino]-1,4-phenylene[ (4-butylphenyl)imino][1,1'-biphenyl]-4,4'-diyl[[4-(1-methylpropyl)phenyl]imino][1,1'-biphenyl]-4,4'-diyl] (9CI) (CA INDEX NAME)



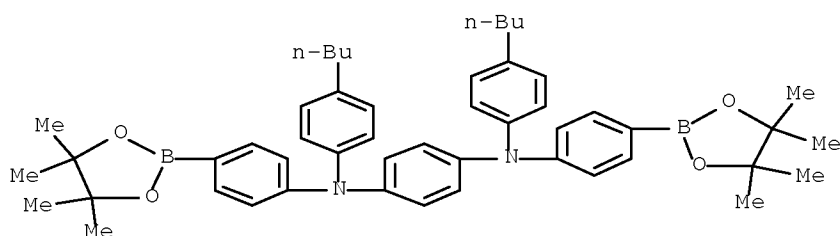
RN 479517-43-6 CAPLUS

CN 1,4-Benzenediamine, N,N'-bis(4-bromophenyl)-N,N'-bis(4-butylphenyl)-, polymer with N,N'-bis(4-butylphenyl)-N,N'-bis[4-(4,4,5,5-tetramethyl-1,3,2-dioxaborolan-2-yl)phenyl]-1,4-benzenediamine (9CI) (CA INDEX NAME)

CM 1

CRN 479517-42-5

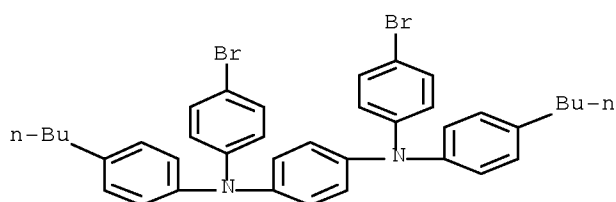
CMF C50 H62 B2 N2 O4



CM 2

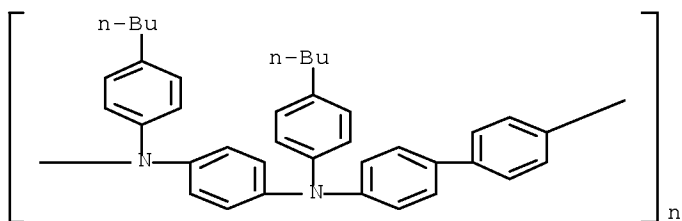
CRN 372200-89-0

CMF C38 H38 Br2 N2



RN 479517-48-1 CAPLUS

CN Poly[[ (4-butylphenyl)imino]-1,4-phenylene[ (4-butylphenyl)imino][1,1'-biphenyl]-4,4'-diyl] (CA INDEX NAME)



IT 479517-28-7DF, reaction products with bromobenzene and glycol benzenboronate

RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)

(starting materials; preparation of polymer containing substituted triphenylamine units for optical devices)

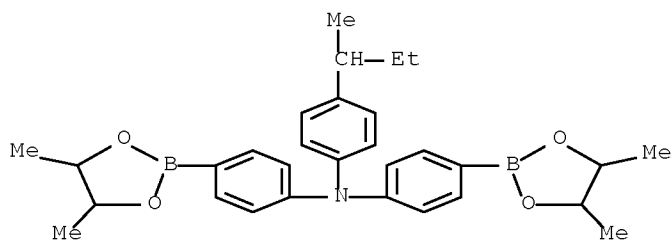
RN 479517-28-7 CAPLUS

CN 1,4-Benzenediamine, N,N'-bis(4-bromophenyl)-N,N'-bis(4-butylphenyl)-, polymer with N,N-bis[4-(4,5-dimethyl-1,3,2-dioxaborolan-2-yl)phenyl]-4-(1-methylpropyl)benzenamine (9CI) (CA INDEX NAME)

CM 1

CRN 479517-27-6

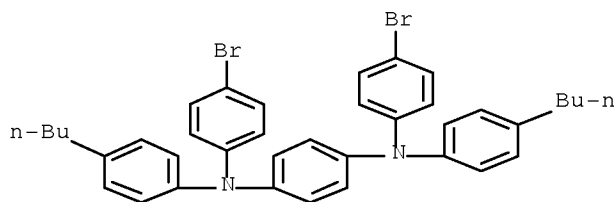
CMF C30 H37 B2 N O4



CM 2

CRN 372200-89-0

CMF C38 H38 Br2 N2



OS.CITING REF COUNT: 3 THERE ARE 3 CAPLUS RECORDS THAT CITE THIS RECORD  
(3 CITINGS)  
REFERENCE COUNT: 6 THERE ARE 6 CITED REFERENCES AVAILABLE FOR THIS  
RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

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(FILE 'HOME' ENTERED AT 14:27:19 ON 22 JAN 2010)

FILE 'REGISTRY' ENTERED AT 14:28:13 ON 22 JAN 2010

L1 STRUCTURE UPLOADED

L2 50 S L1

L3 1783 S L1 FULL

FILE 'CAPLUS' ENTERED AT 14:29:07 ON 22 JAN 2010

L4 1050 S L3

L5 440 S L3 AND ELECTROLUMIN?

L6 6 S L5 AND SUZ?

.

This file contains CAS Registry Numbers for easy and accurate

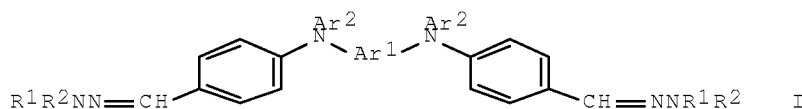


substance identification.

=> d ibib L5 abs hitstr 430-440

L5 ANSWER 430 OF 440 CAPLUS COPYRIGHT 2010 ACS on STN  
ACCESSION NUMBER: 1996:733519 CAPLUS Full-text  
DOCUMENT NUMBER: 125:343202  
ORIGINAL REFERENCE NO.: 125:63865a,63868a  
TITLE: Organic electric-field ~~electroluminescent~~  
device with hydrazone compound  
INVENTOR(S): Kawarasaki, Morihiro; Fujii, Ichiro; Enomoto, Kazuhiro  
PATENT ASSIGNEE(S): Sharp Kk, Japan  
SOURCE: Jpn. Kokai Tokkyo Koho, 9 pp.  
CODEN: JKXXAF  
DOCUMENT TYPE: Patent  
LANGUAGE: Japanese  
FAMILY ACC. NUM. COUNT: 1  
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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JP 08231950	A	19960910	JP 1995-40905	19950228
PRIORITY APPLN. INFO.:			JP 1995-40905	19950228
OTHER SOURCE(S):	MARPAT	125:343202		
GI				



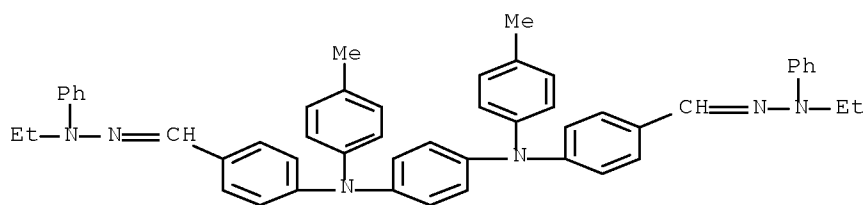
AB The device contains (A) an anode successively coated with (B) a phosphor-containing ~~electroluminescent~~ layer, (C) a hole-transfer layer with a hydrazone compound I [Ar<sup>1</sup> = C<sub>6</sub>-12 arylene; Ar<sup>2</sup> = C<sub>6</sub>-12 (substituted) aryl, (substituted) aralkyl, C<sub>1</sub>-4 alkyl, allyl; R<sup>1</sup>-2 = C<sub>6</sub>-12 (substituted) aryl, C<sub>1</sub>-4 alkyl, (substituted) aralkyl, heterocyclic], and (D) a cathode. The device with the hydrazone compound shows no crystallinity change by heating and long service life.

IT 183944-55-0 183944-57-2 183944-61-8  
183944-63-0 183944-64-1 183944-65-2  
183944-67-4 183944-69-6

RL: TEM (Technical or engineered material use); USES (Uses)  
(organic elec.-field ~~electroluminescent~~ device containing  
hole-transfer layer with hydrazone)

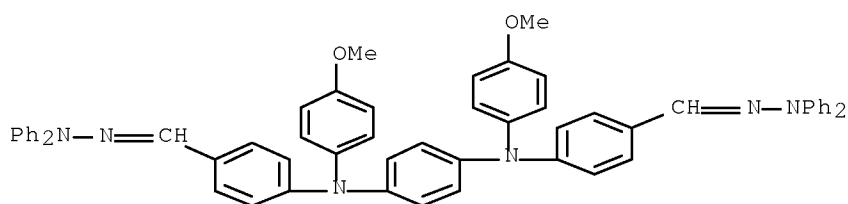
RN 183944-55-0 CAPLUS

CN Benzaldehyde, 4,4'-[1,4-phenylenebis[(4-methylphenyl)imino]]bis-,  
bis(ethylphenylhydrazone) (9CI) (CA INDEX NAME)



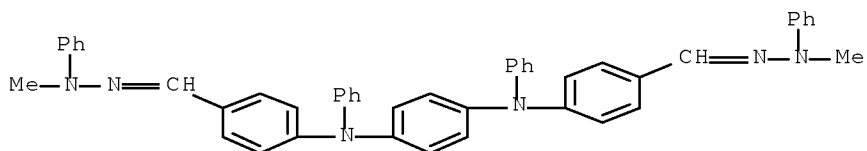
RN 183944-57-2 CAPLUS

CN Benzaldehyde, 4,4'-[1,4-phenylenebis[(4-methoxyphenyl)imino]]bis-, bis(diphenylhydrazone) (9CI) (CA INDEX NAME)



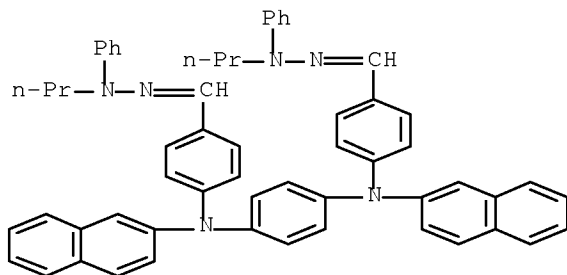
RN 183944-61-8 CAPLUS

CN Benzaldehyde, 4,4'-[1,4-phenylenebis(phenylimino)]bis-, bis(methylphenylhydrazone) (9CI) (CA INDEX NAME)

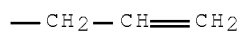
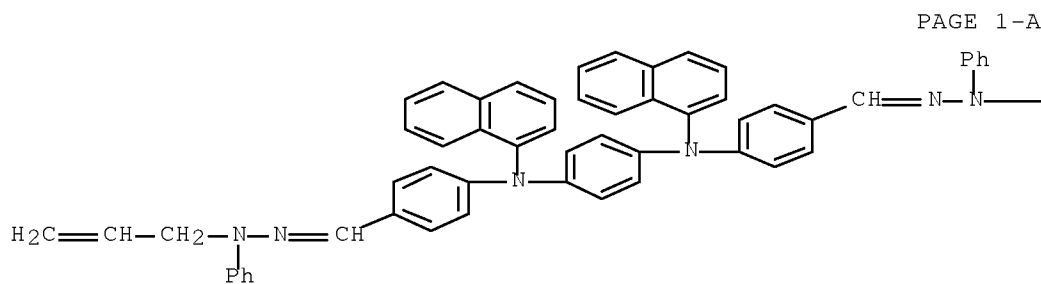


RN 183944-63-0 CAPLUS

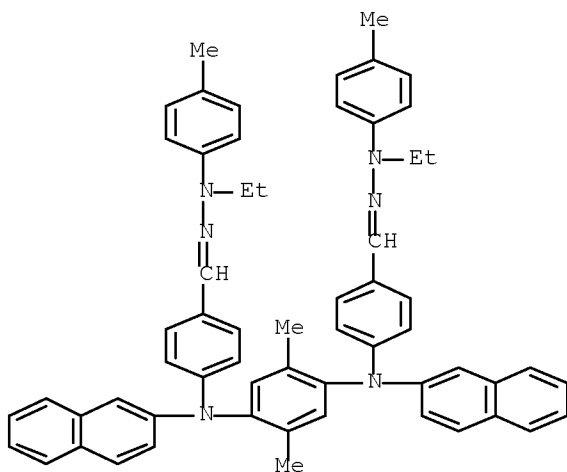
CN Benzaldehyde, 4,4'-[1,4-phenylenebis(2-naphthalenylimino)]bis-, bis(phenylpropylhydrazone) (9CI) (CA INDEX NAME)



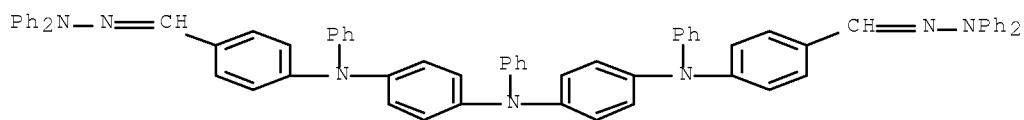
RN 183944-64-1 CAPLUS  
 CN Benzaldehyde, 4,4'-[1,4-phenylenebis(1-naphthalenylimino)]bis-,  
 bis(phenyl-2-propenylhydrazone) (9CI) (CA INDEX NAME)



RN 183944-65-2 CAPLUS  
 CN Benzaldehyde, 4,4'-[(2,5-dimethyl-1,4-phenylene)bis(2-naphthalenylimino)]bis-, bis[ethyl(4-methylphenyl)hydrazone] (9CI) (CA INDEX NAME)



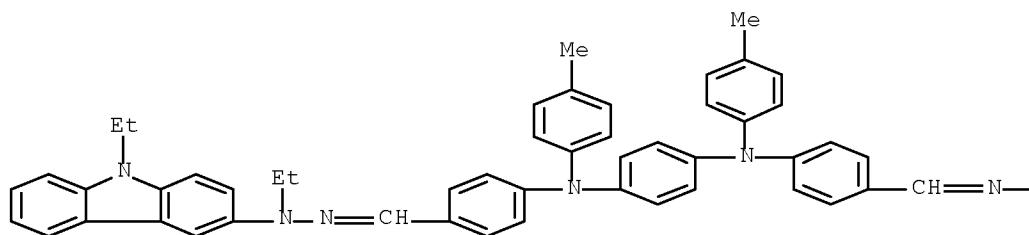
RN 183944-67-4 CAPLUS  
 CN Benzaldehyde, 4,4'-[(phenylimino)bis[4,1-phenylene(phenylimino)]]bis-,  
 bis(diphenylhydrazone) (9CI) (CA INDEX NAME)



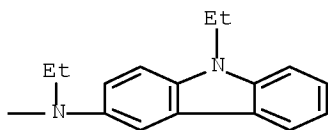
RN 183944-69-6 CAPLUS

CN Benzaldehyde, 4,4'-[1,4-phenylenebis[(4-methylphenyl)imino]]bis-,  
bis[ethyl(9-ethyl-9H-carbazol-3-yl)hydrazone] (9CI) (CA INDEX NAME)

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PAGE 1-B



L5 ANSWER 431 OF 440 CAPLUS COPYRIGHT 2010 ACS on STN  
 ACCESSION NUMBER: 1996:612438 CAPLUS Full-text  
 DOCUMENT NUMBER: 125:234385  
 ORIGINAL REFERENCE NO.: 125:43563a,43566a  
 TITLE: Positive hole-transporting material and usage thereof  
 INVENTOR(S): Enokida, Toshio; Tamano, Michiko; Onikubo, Shunichi  
 PATENT ASSIGNEE(S): Toyo Ink Mfg Co, Japan  
 SOURCE: Jpn. Kokai Tokkyo Koho, 16 pp.  
 CODEN: JKXXAF  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Japanese  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
-----	----	-----	-----	-----
JP 08179526	A	19960712	JP 1994-319695	19941222
JP 3269300	B2	20020325		

GI For diagram(s), see printed CA Issue.

AB The material has the general formula ABA [A = diamine derivative residue I ; R1-9= H, halo, (substituted) alkyl, (substituted) alkoxy, (substituted) thioalkoxy, cyano, (mono- or di-substituted) amino, OH, SH, (substituted) aryloxy, (substituted) arylthio, (substituted) aromatic ring, (substituted) heterocycle;  $\geq 1$  of each of R1-3, R4-6, and R7-9 is not H and the adjacent groups may form alicyclic, carbocyclic aromatic, or heterocyclic aromatic rings which may be substituted; X = divalent aromatic ring residue; B = alicyclic residue II ; Y = (substituted) alkyl; n = 2-7; m = 0-2n]. Organic electroluminescent devices comprising  $\geq 1$  organic compound thin film luminescent layers  $\geq 1$  of which contains the material, and electrophotog. photoreceptors containing a charge-generating agent and the material are also claimed. The material shows good pos. hole-transporting properties and high quality electroluminescent devices and photoreceptors are obtained by using it. Thus, III was used typically for the material, which was prepared by reacting cyclohexanone with 9,10-bis(4-butylphenylphenylamino)phenanthrene.

IT 181796-78-1 181796-81-6

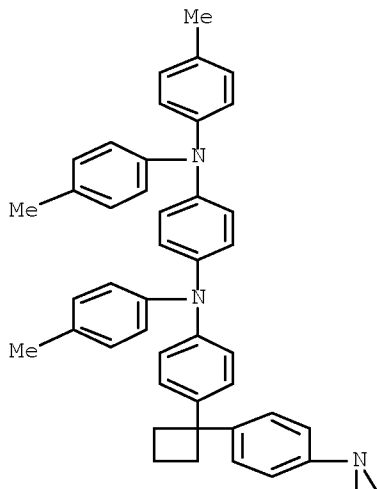
RL: DEV (Device component use); USES (Uses)

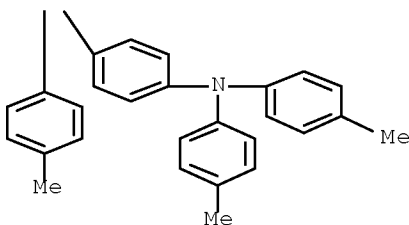
(pos. hole transporting agent for electrophotog. photoreceptor and electroluminescent device)

RN 181796-78-1 CAPLUS

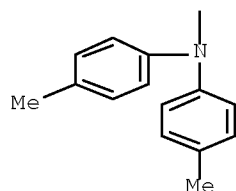
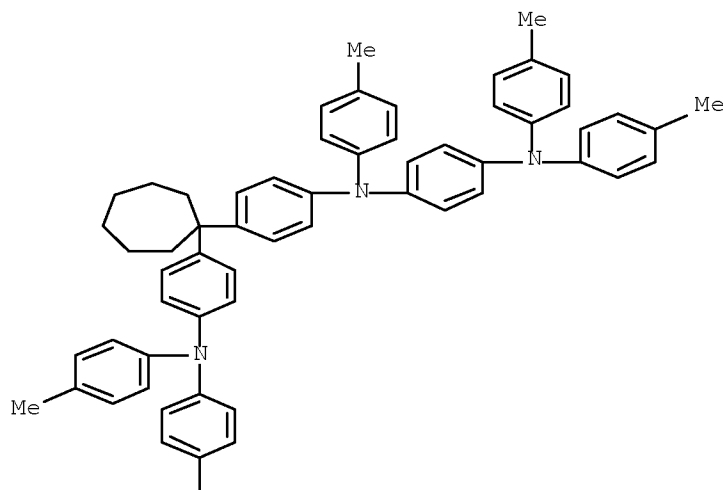
CN 1,4-Benzenediamine, N,N''-(cyclobutylidenedi-4,1-phenylene)bis[N,N',N'-tris(4-methylphenyl)- (9CI) (CA INDEX NAME)

PAGE 1-A





RN 181796-81-6 CAPLUS  
 CN 1,4-Benzenediamine, N,N'-(cycloheptylidenedi-4,1-phenylene)bis[N,N',N'-tris(4-methylphenyl)- (9CI) (CA INDEX NAME)]

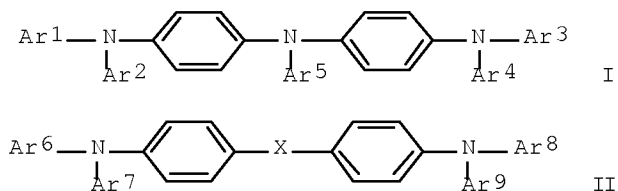


L5 ANSWER 432 OF 440 CAPLUS COPYRIGHT 2010 ACS on STN  
 ACCESSION NUMBER: 1996:580231 CAPLUS Full-text  
 DOCUMENT NUMBER: 125:234547  
 ORIGINAL REFERENCE NO.: 125:43591a  
 TITLE: Organic electroluminescent element, organic

thin film, and triamine compounds  
 INVENTOR(S): Kawamura, Hisayuki; Nakamura, Hiroaki; Hosokawa, Chishio  
 PATENT ASSIGNEE(S): Idemitsu Kosan Co., Ltd., Japan  
 SOURCE: PCT Int. Appl., 94 pp.  
 CODEN: PIXXD2  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Japanese  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 9622273	A1	19960725	WO 1996-JP82	19960119
W: CN, US				
RW: AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE				
JP 08193191	A	19960730	JP 1995-6254	19950119
JP 3306735	B2	20020724		
JP 09095470	A	19970408	JP 1995-252979	19950929
JP 3139528	B2	20010305		
EP 805143	A1	19971105	EP 1996-900715	19960119
EP 805143	B1	20011205		
R: BE, CH, DE, FR, GB, IT, LI, NL, SE				
CN 1168132	A	19971217	CN 1996-191527	19960119
CN 1152607	C	20040602		
US 6074734	A	20000613	US 1997-860927	19970721
PRIORITY APPLN. INFO.:			JP 1995-6254	A 19950119
			JP 1995-252979	A 19950929
			WO 1996-JP82	W 19960119

ASSIGNMENT HISTORY FOR US PATENT AVAILABLE IN LSUS DISPLAY FORMAT  
 GI



AB Triamine compds. are represented by general formula I (Ar1-5 = C6-18 aryl). An organic ~~electroluminescent~~ element comprises a pair of electrodes and, sandwiched therebetween, an organic compound layer containing at least a luminescent band layer and a hole transport band layer comprising a hole injection layer containing the triamine compound and a hole transport layer; and a two-layered organic thin film comprising a layer that contains I and has a thickness of 5 nm to 5 μm and another layer that contains a compound II (X = methylene, phenylene, biphenylene, O, S; Ar6-10 = C6-18 aryl) and has a thickness of 5 nm to 5 μm. The invention provides an organic ~~electroluminescent~~ element reduced in the risk of causing dielec. breakdown even when stored for long and remarkably enhanced in ~~electroluminescence~~ efficiency, a long-lived organic ~~electroluminescent~~ element excellent in the stability of ~~electroluminescence~~ even when continuously driven for long, and

an organic thin film excellent in hole injection and transport characteristics.

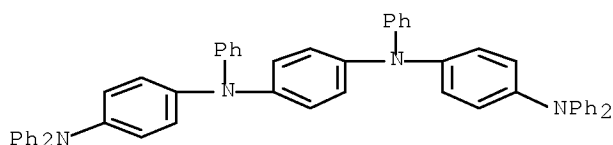
IT 141546-10-3 181367-10-2 181367-42-0

RL: DEV (Device component use); PEP (Physical, engineering or chemical process); PROC (Process); USES (Uses)

(triamine compound thin film for electroluminescent element)

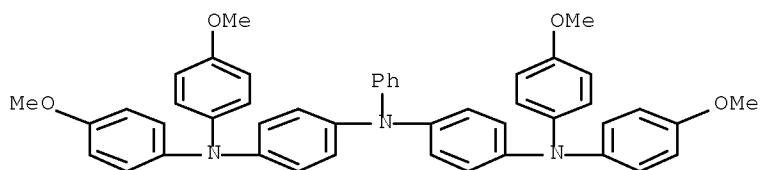
RN 141546-10-3 CAPLUS

CN 1,4-Benzenediamine, N1,N4-bis[4-(diphenylamino)phenyl]-N1,N4-diphenyl-  
(CA INDEX NAME)



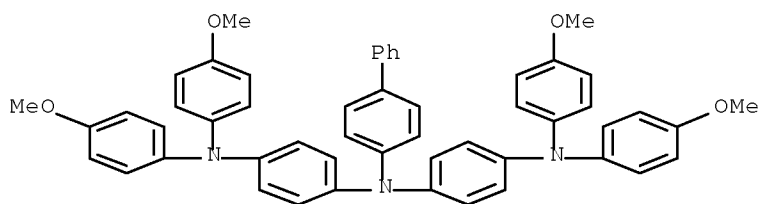
RN 181367-10-2 CAPLUS

CN 1,4-Benzenediamine, N1-[4-[bis(4-methoxyphenyl)amino]phenyl]-N4,N4-bis(4-methoxyphenyl)-N1-phenyl- (CA INDEX NAME)



RN 181367-42-0 CAPLUS

CN 1,4-Benzenediamine, N1-[1,1'-biphenyl]-4-yl-N1-[4-[bis(4-methoxyphenyl)amino]phenyl]-N4,N4-bis(4-methoxyphenyl)- (CA INDEX NAME)



OS.CITING REF COUNT: 13 THERE ARE 13 CAPLUS RECORDS THAT CITE THIS RECORD (15 CITINGS)

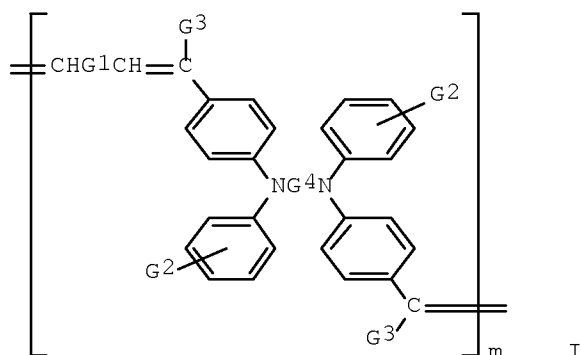
REFERENCE COUNT: 4 THERE ARE 4 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L5 ANSWER 433 OF 440 CAPLUS COPYRIGHT 2010 ACS on STN  
ACCESSION NUMBER: 1996:560311 CAPLUS Full-text  
DOCUMENT NUMBER: 125:196755



ORIGINAL REFERENCE NO.: 125:36861a,36864a  
 TITLE: Polymeric carrier-transporting materials for electroluminescent devices, electrophotographic photoreceptors, etc.  
 INVENTOR(S): Ito, Juichi; Sato, Hisaya; Hayashi, Takako  
 PATENT ASSIGNEE(S): Toppan Printing Co., Ltd., Japan  
 SOURCE: Jpn. Kokai Tokkyo Koho, 20 pp.  
 CODEN: JKXXAF  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Japanese  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 08157575	A	19960618	JP 1994-330622	19941207
JP 3482719	B2	20040106		
PRIORITY APPLN. INFO.: GI			JP 1994-330622	19941207



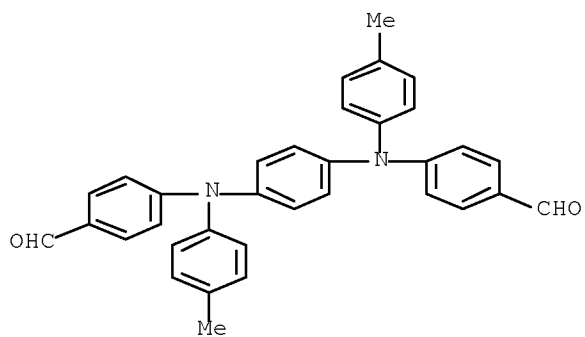
AB The title materials capable of forming carrier-transporting layers by spin coating or casting with  $T_g \geq 120^\circ$  and good mech. strength have the general formula I [ $m = d.p.$ ;  $G1 =$  direct bond, arylene, alkylene, alkylenedioxy, other linking group;  $G2 =$  (halo)alkyl;  $G3 =$  H, alkyl;  $G4 =$  phenylene, biphenylene, other linking group].  $N,N'$ -bis(4-formylphenyl)- $N,N'$ -di-*p*-tolyl-*p*-phenylenediamine was prepared and polymerized with *m*-xylylbis(triphenylphosphonium chloride).

IT 181064-89-1P 181064-90-4P  
 RL: IMF (Industrial manufacture); PRP (Properties); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
 (polymeric carrier-transporting materials for electroluminescent devices and electrophotog. photoreceptors)

RN 181064-89-1 CAPLUS

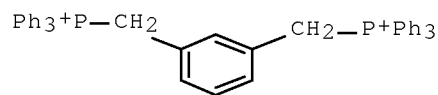
CN Phosphonium, [1,3-phenylenebis(methylene)]bis(triphenyl-, dichloride, polymer with 4,4'-[1,4-phenylenebis[(4-methylphenyl)imino]]bis[benzaldehyde] (9CI) (CA INDEX NAME)

CRN 131660-39-4  
 CMF C34 H28 N2 O2



CM 2

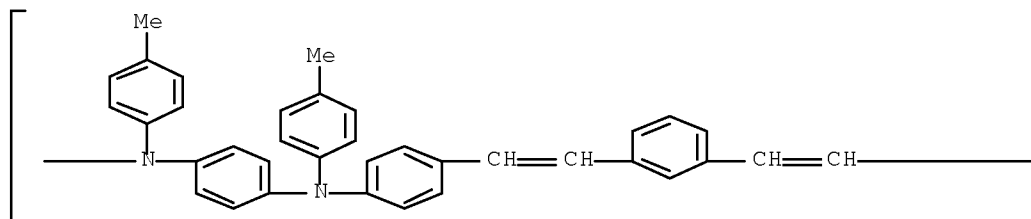
CRN 66726-75-8  
 CMF C44 H38 P2 . 2 Cl

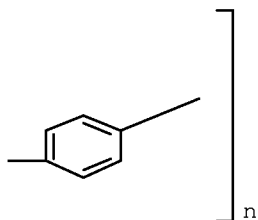


● 2 Cl-

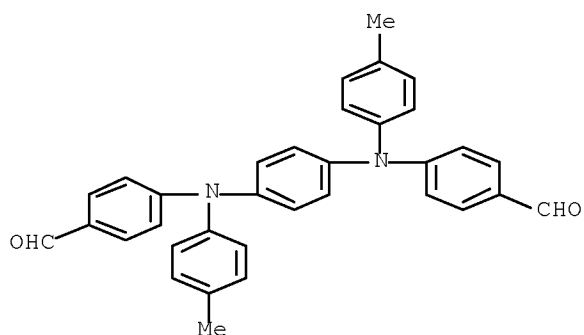
RN 181064-90-4 CAPLUS  
 CN Poly[[ (4-methylphenyl) imino]-1,4-phenylene[ (4-methylphenyl) imino]-1,4-phenylene-1,2-ethenediyl-1,3-phenylene-1,2-ethenediyl-1,4-phenylene] (9CI)  
 (CA INDEX NAME)

PAGE 1-A

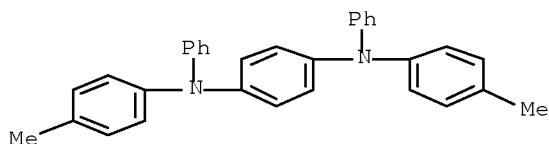




IT 131660-39-4P 138171-14-9P  
 RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT  
 (Reactant or reagent)  
 (polymeric carrier-transporting materials for  
 electroluminescent devices and electrophotog. photoreceptors)  
 RN 131660-39-4 CAPLUS  
 CN Benzaldehyde, 4,4'-[1,4-phenylenebis[(4-methylphenyl)imino]]bis- (CA  
 INDEX NAME)



RN 138171-14-9 CAPLUS  
 CN 1,4-Benzenediamine, N1,N4-bis(4-methylphenyl)-N1,N4-diphenyl- (CA INDEX  
 NAME)



OS.CITING REF COUNT: 2 THERE ARE 2 CAPLUS RECORDS THAT CITE THIS RECORD  
 (2 CITINGS)

L5 ANSWER 434 OF 440 CAPLUS COPYRIGHT 2010 ACS on STN  
 ACCESSION NUMBER: 1996:462259 CAPLUS Full-text  
 DOCUMENT NUMBER: 125:127324

ORIGINAL REFERENCE NO.: 125:23605a,23608a  
 TITLE: Organic thin-film ~~electroluminescent~~ device  
 INVENTOR(S): Utsuki, Koji; Hirano, Akira; Tsuruoka, Eriko; Ikeda, Naoyasu  
 PATENT ASSIGNEE(S): Nippon Electric Co, Japan; Samsung Sdi Co., Ltd.  
 SOURCE: Jpn. Kokai Tokkyo Koho, 25 pp.  
 CODEN: JKXXAF  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Japanese  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 08109373	A	19960430	JP 1994-247930	19941013
JP 3758694	B2	20060322		
US 5858562	A	19990112	US 1995-542624	19951013

PRIORITY APPLN. INFO.: JP 1994-247930 A 19941013

ASSIGNMENT HISTORY FOR US PATENT AVAILABLE IN LSUS DISPLAY FORMAT

OTHER SOURCE(S): MARPAT 125:127324

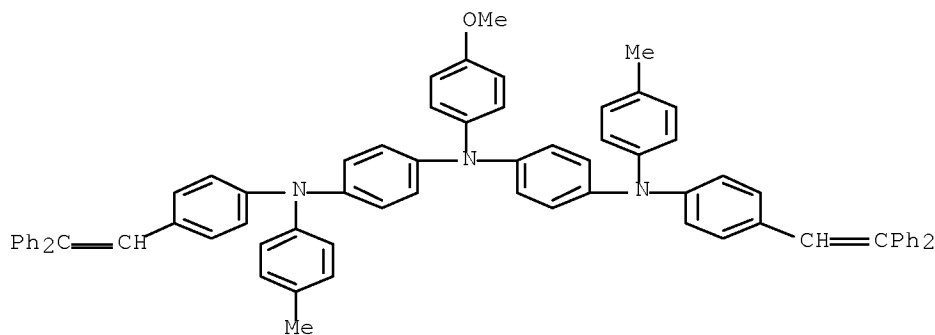
AB An organic thin-film ~~electroluminescent~~ device comprising a hole transporting region sandwiched between a pair of electrodes, the hole transporting region consisting of a hole injecting layer and/or a hole transporting layer in contact with the anode, and a current blocking layer in contact with the light emitting layer, wherein the hole transporting layer comprises bistriphenylaminestyryl derivs. represented by (XAr1)(Ar2)NAr3AAr4N(Ar5Y)(Ar6) [A = C1-10 alkylidene, cycloalkylidene, O, S, or amino; Ar1, Ar3, Ar4, Ar5 = arylene; Ar2, Ar6 = aryl; X, Y = R1C:C(Ar7)(Ar8) (Ar7, Ar8 = aryl; R1 = H, halo, OH, amino, C1-6 alkyl)].

IT 152268-53-6 152268-54-7 152268-56-9  
 152268-57-0 152268-58-1 152268-59-2  
 152268-60-5 152268-61-6 152268-62-7  
 152268-63-8 152268-64-9 152268-65-0  
 179167-65-8 179167-66-9

RL: DEV (Device component use); USES (Uses)  
 (hole transporting layer for organic thin layer ~~electroluminescent~~ device)

RN 152268-53-6 CAPLUS

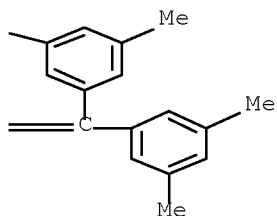
CN 1,4-Benzenediamine, N1-[4-(2,2-diphenylethenyl)phenyl]-N4-[4-[[4-(2,2-diphenylethenyl)phenyl](4-methylphenyl)amino]phenyl]-N4-(4-methoxyphenyl)-N1-(4-methylphenyl)- (CA INDEX NAME)



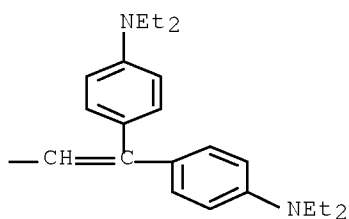
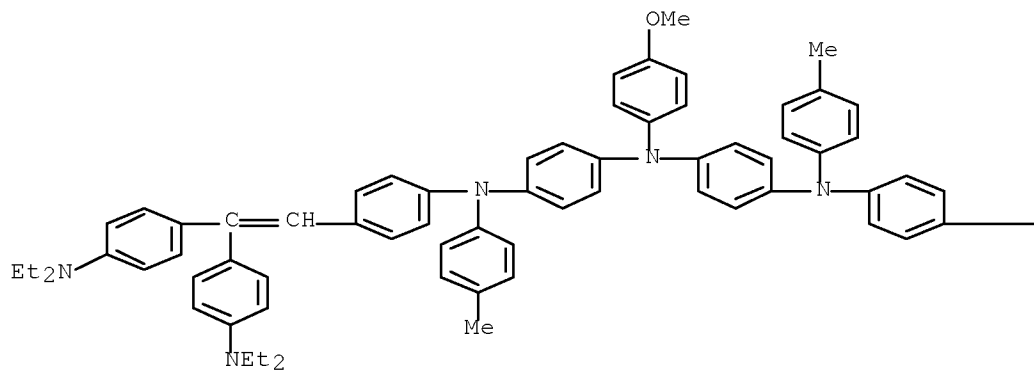
RN 152268-54-7 CAPLUS

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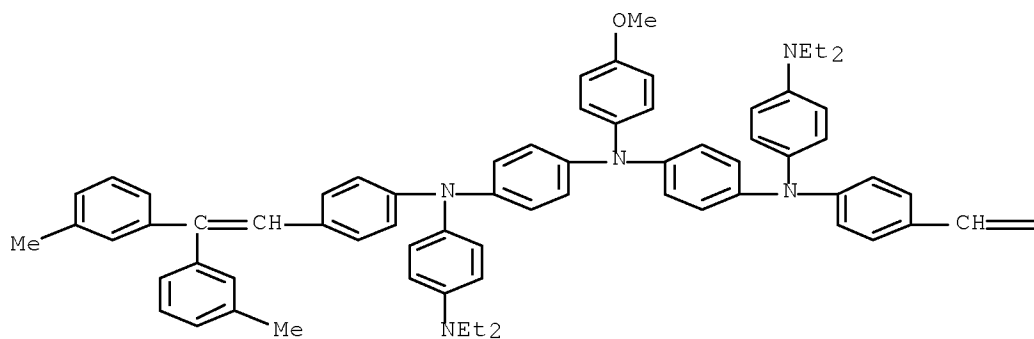
PAGE 1-B

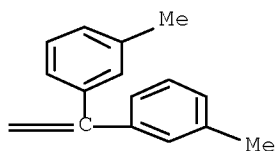


CN 1,4-Benzenediamine, N1-[4-[2,2-bis[4-(diethylamino)phenyl]ethenyl]phenyl]-  
N4-[4-[[4-[2,2-bis[4-(diethylamino)phenyl]ethenyl]phenyl](4-  
methylphenyl)amino]phenyl]-N4-(4-methoxyphenyl)-N1-(4-methylphenyl)- (CA  
INDEX NAME)



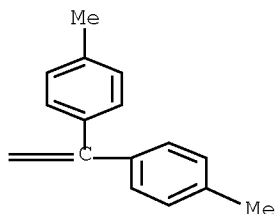
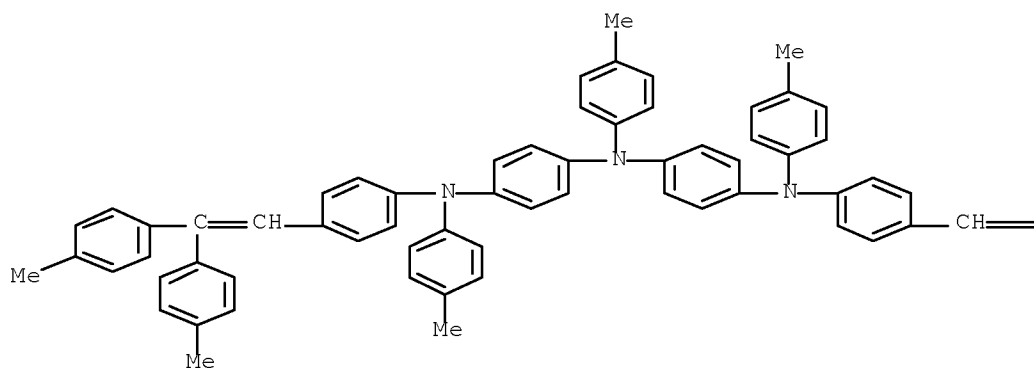
RN 152268-57-0 CAPLUS  
 CN 1,4-Benzenediamine, N1-[4-[2,2-bis(3-methylphenyl)ethenyl]phenyl]-N4-[4-  
 [[4-[2,2-bis(3-methylphenyl)ethenyl]phenyl][4-  
 (diethylamino)phenyl]amino]phenyl]-N1-[4-(diethylamino)phenyl]-N4-(4-  
 methoxyphenyl)- (CA INDEX NAME)





RN 152268-58-1 CAPLUS

CN 1,4-Benzenediamine, N1-[4-[2,2-bis(4-methylphenyl)ethenyl]phenyl]-N4-[4-  
[[4-[2,2-bis(4-methylphenyl)ethenyl]phenyl](4-methylphenyl)amino]phenyl]-  
N1,N4-bis(4-methylphenyl)- (CA INDEX NAME)

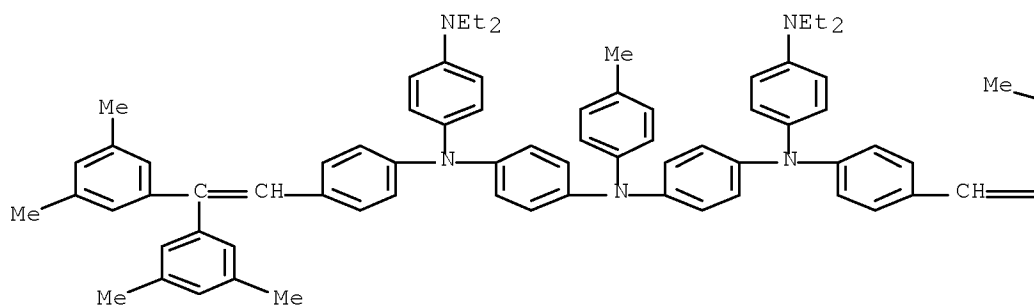


RN 152268-59-2 CAPLUS

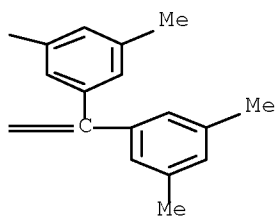
CN 1,4-Benzenediamine, N1-[4-[2,2-bis(3,5-dimethylphenyl)ethenyl]phenyl]-N4-[4-  
[[4-[2,2-bis(3,5-dimethylphenyl)ethenyl]phenyl][4-

(diethylamino)phenyl]amino]phenyl]-N1-[4-(diethylamino)phenyl]-N4-(4-methylphenyl)- (CA INDEX NAME)

PAGE 1-A



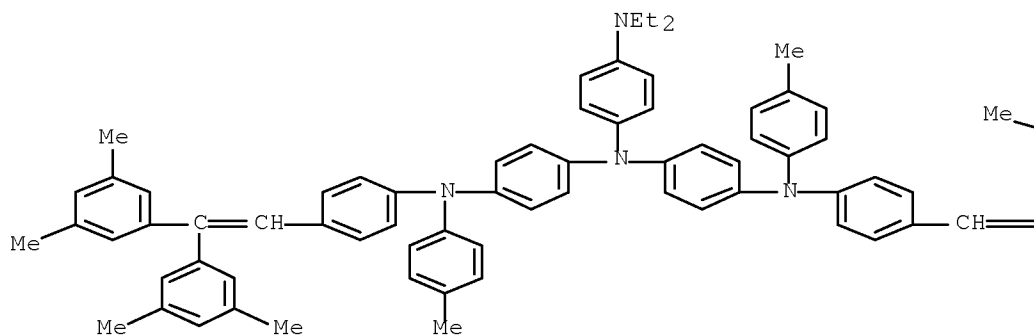
PAGE 1-B



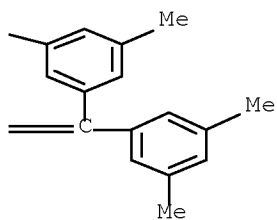
RN 152268-60-5 CAPLUS

CN 1,4-Benzenediamine, N1-[4-[2,2-bis(3,5-dimethylphenyl)ethenyl]phenyl]-N4-[4-[4-[2,2-bis(3,5-dimethylphenyl)ethenyl]phenyl](4-methylphenyl)amino]phenyl]-N4-[4-(diethylamino)phenyl]-N1-(4-methylphenyl)- (CA INDEX NAME)

PAGE 1-A

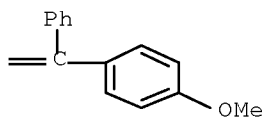
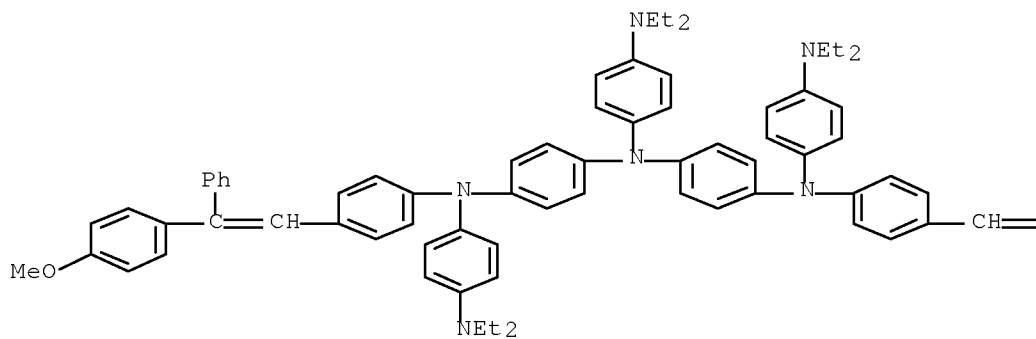






RN 152268-61-6 CAPLUS

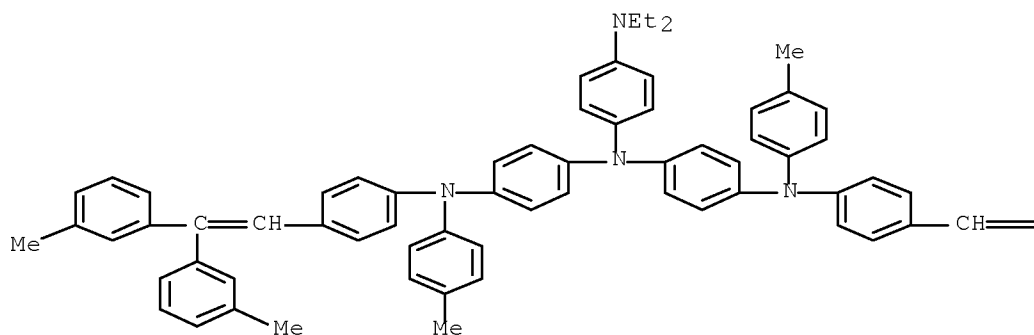
CN 1,4-Benzenediamine, N1,N4-bis[4-(diethylamino)phenyl]-N1-[4-[[4-(diethylamino)phenyl][4-[2-(4-methoxyphenyl)-2-phenylethenyl]phenyl]amino]phenyl]-N4-[4-[2-(4-methoxyphenyl)-2-phenylethenyl]phenyl]- (CA INDEX NAME)



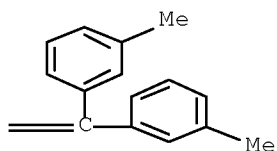
RN 152268-62-7 CAPLUS

CN 1,4-Benzenediamine, N1-[4-[2,2-bis(3-methylphenyl)ethenyl]phenyl]-N4-[4-  
[[4-[2,2-bis(3-methylphenyl)ethenyl]phenyl](4-methylphenyl)amino]phenyl]-  
N4-[4-(diethylamino)phenyl]-N1-(4-methylphenyl)- (CA INDEX NAME)

PAGE 1-A



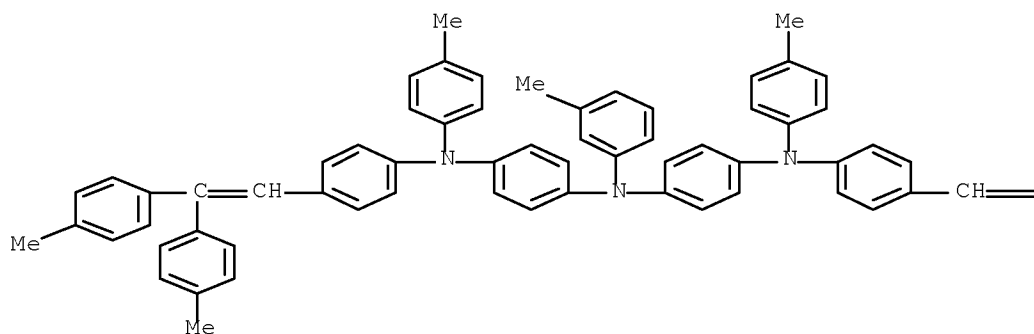
PAGE 1-B



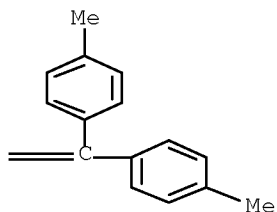
RN 152268-63-8 CAPLUS

CN 1,4-Benzenediamine, N1-[4-[2,2-bis(4-methylphenyl)ethenyl]phenyl]-N4-[4-  
[[4-[2,2-bis(4-methylphenyl)ethenyl]phenyl](4-methylphenyl)amino]phenyl]-  
N4-(3-methylphenyl)-N1-(4-methylphenyl)- (CA INDEX NAME)

PAGE 1-A



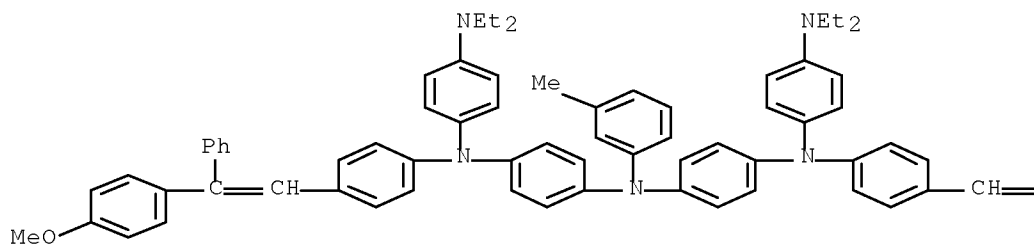
PAGE 1-B



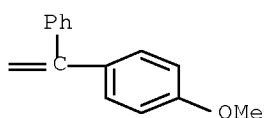
RN 152268-64-9 CAPLUS

CN 1,4-Benzenediamine, N1-[4-(diethylamino)phenyl]-N4-[4-[[4-(diethylamino)phenyl][4-[2-(4-methoxyphenyl)-2-phenylethenyl]phenyl]amino]phenyl]-N1-[4-[2-(4-methoxyphenyl)-2-phenylethenyl]phenyl]-N4-(3-methylphenyl)- (CA INDEX NAME)

PAGE 1-A



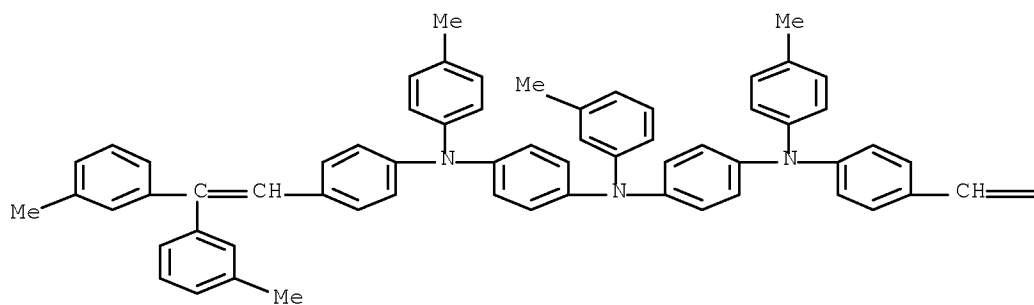
PAGE 1-B



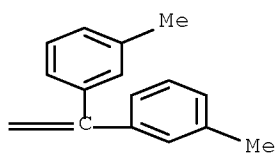
RN 152268-65-0 CAPLUS

CN 1,4-Benzenediamine, N1-[4-[2,2-bis(3-methylphenyl)ethenyl]phenyl]-N4-[4-[[4-[2,2-bis(3-methylphenyl)ethenyl]phenyl](4-methylphenyl)amino]phenyl]-N4-(3-methylphenyl)-N1-(4-methylphenyl)- (CA INDEX NAME)

PAGE 1-A



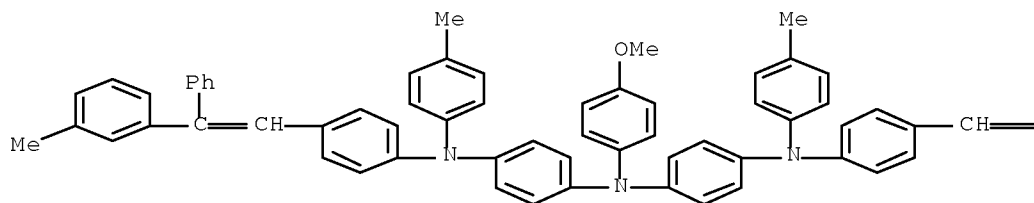
PAGE 1-B



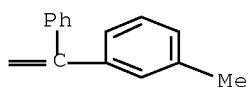
RN 179167-65-8 CAPLUS

CN 1,4-Benzenediamine, N1-(4-methoxyphenyl)-N4-(4-methylphenyl)-N1-[4-[(4-methylphenyl)[4-[2-(3-methylphenyl)-2-phenylethenyl]phenyl]amino]phenyl]-N4-[4-[2-(3-methylphenyl)-2-phenylethenyl]phenyl]- (CA INDEX NAME)

PAGE 1-A

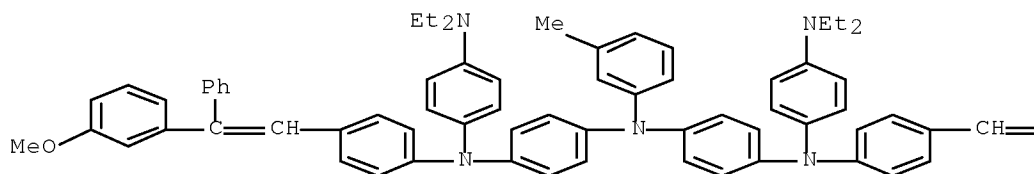


PAGE 1-B

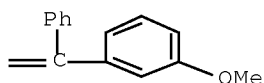


RN 179167-66-9 CAPLUS  
 CN 1,4-Benzenediamine, N1-[4-(diethylamino)phenyl]-N4-[4-[[4-(diethylamino)phenyl][4-[2-(3-methoxyphenyl)-2-phenylethenyl]phenyl]amino]phenyl]-N1-[4-[2-(3-methoxyphenyl)-2-phenylethenyl]phenyl]-N4-(3-methylphenyl)- (CA INDEX NAME)

PAGE 1-A



PAGE 1-B



OS.CITING REF COUNT: 3 THERE ARE 3 CAPLUS RECORDS THAT CITE THIS RECORD  
 (3 CITINGS)

L5 ANSWER 435 OF 440 CAPLUS COPYRIGHT 2010 ACS on STN  
 ACCESSION NUMBER: 1996:294601 CAPLUS Full-text  
 DOCUMENT NUMBER: 124:328419  
 ORIGINAL REFERENCE NO.: 124:60655a,60658a  
 TITLE: Hole-transporting material for organic electroluminescence device or electrophotographic photoreceptor  
 INVENTOR(S): Tamano, Michiko; Onikubo, Toshikazu; Uemura, Toshikyuki; Ogawa, Tadashi; Enokida, Toshio  
 PATENT ASSIGNEE(S): Toyo Ink Manufacturing Co., Ltd., Japan  
 SOURCE: Eur. Pat. Appl., 34 pp.  
 CODEN: EPXXDW  
 DOCUMENT TYPE: Patent  
 LANGUAGE: English  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 699654	A1	19960306	EP 1995-305450	19950804
EP 699654	B1	19990331		
R: DE, FR, GB				
JP 08227165	A	19960903	JP 1995-164912	19950630
JP 3261930	B2	20020304		
JP 08100038	A	19960416	JP 1995-171739	19950707

JP 3296147 B2 20020624  
 US 5681664 A 19971028 US 1995-510535 19950802  
 PRIORITY APPLN. INFO.: JP 1994-183198 A 19940804  
 JP 1994-319694 A 19941222

ASSIGNMENT HISTORY FOR US PATENT AVAILABLE IN LSUS DISPLAY FORMAT

AB A hole-transporting material of formula H-A-[-B-A-]<sub>n</sub>-B-A-H has excellent hole-transporting capability and excellent durability, wherein A is a specified aromatic amine derivative residue, B is a residue, and n is an integer of 1-5000. The materials may be included in an organic EL device of an electrophotog. photoreceptor which are excellent in stability in continuous long-term use.

IT 176443-47-3 176443-48-4 176443-77-9  
 176443-81-5

RL: DEV (Device component use); TEM (Technical or engineered material use); USES (Uses)

(hole-transporting material for EL device or electrophotog. photoreceptor)

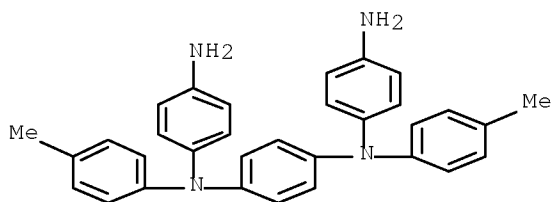
RN 176443-47-3 CAPLUS

CN Cyclopentanone, polymer with N,N'-bis(4-aminophenyl)-N,N'-bis(4-methylphenyl)-1,4-benzenediamine (9CI) (CA INDEX NAME)

CM 1

CRN 176443-17-7

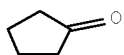
CMF C32 H30 N4



CM 2

CRN 120-92-3

CMF C5 H8 O



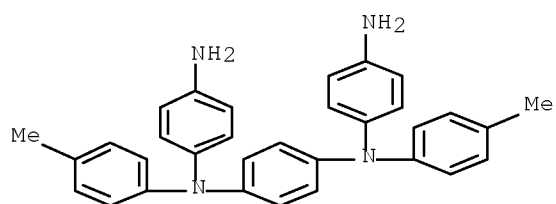
RN 176443-48-4 CAPLUS

CN Cyclooctanone, polymer with N,N'-bis(4-aminophenyl)-N,N'-bis(4-methylphenyl)-1,4-benzenediamine (9CI) (CA INDEX NAME)

CM 1

CRN 176443-17-7

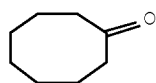
CMF C32 H30 N4



CM 2

CRN 502-49-8

CMF C8 H14 O



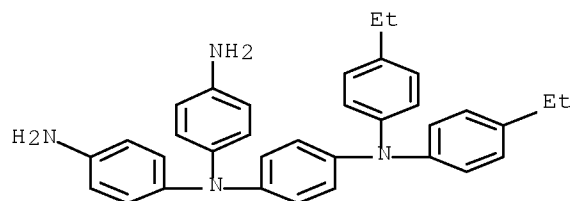
RN 176443-77-9 CAPLUS

CN Cyclohexanone, 3,3,5-trimethyl-, polymer with  
N,N-bis(4-aminophenyl)-N',N'-bis(4-ethylphenyl)-1,4-benzenediamine (9CI)  
(CA INDEX NAME)

CM 1

CRN 176443-76-8

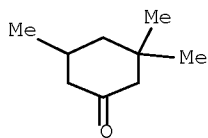
CMF C34 H34 N4



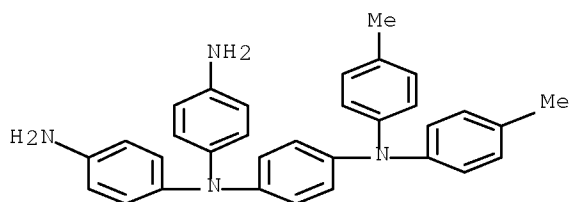
CM 2

CRN 873-94-9

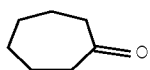
CMF C9 H16 O



RN 176443-81-5 CAPLUS  
 CN Cycloheptanone, polymer with N,N-bis(4-aminophenyl)-N',N'-bis(4-methylphenyl)-1,4-benzenediamine (9CI) (CA INDEX NAME)  
 CM 1  
 CRN 176443-80-4  
 CMF C32 H30 N4

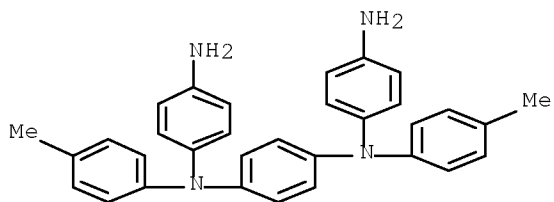


CM 2  
 CRN 502-42-1  
 CMF C7 H12 O



IT ~~176443-18-8P~~ ~~176443-19-9P~~  
 RL: DEV (Device component use); PNU (Preparation, unclassified); PREP (Preparation); USES (Uses)  
 (prepared as hole-transporting material for EL device or electrophotog. photoreceptor)  
 RN 176443-18-8 CAPLUS  
 CN Cyclohexanone, polymer with N,N'-bis(4-aminophenyl)-N,N'-bis(4-methylphenyl)-1,4-benzenediamine (9CI) (CA INDEX NAME)  
 CM 1  
 CRN 176443-17-7  
 CMF C32 H30 N4

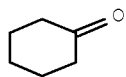




CM 2

CRN 108-94-1

CMF C6 H10 O



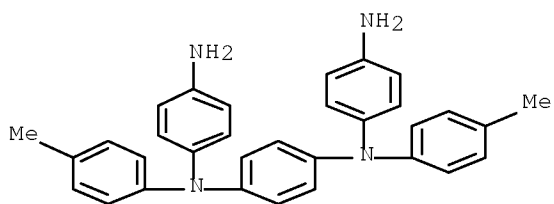
RN 176443-19-9 CAPLUS

CN Cyclohexanone, 4-methyl-, polymer with  
N,N'-bis(4-aminophenyl)-N,N'-bis(4-methylphenyl)-1,4-benzenediamine (9CI)  
(CA INDEX NAME)

CM 1

CRN 176443-17-7

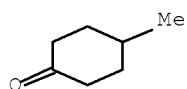
CMF C32 H30 N4



CM 2

CRN 589-92-4

CMF C7 H12 O



OS.CITING REF COUNT: 11 THERE ARE 11 CAPLUS RECORDS THAT CITE THIS  
RECORD (17 CITINGS)

L5 ANSWER 436 OF 440 CAPLUS COPYRIGHT 2010 ACS on STN  
ACCESSION NUMBER: 1995:562195 CAPLUS Full-text  
DOCUMENT NUMBER: 123:20922  
ORIGINAL REFERENCE NO.: 123:3811a,3814a  
TITLE: Molecular design of hole transport materials for  
obtaining high durability in organic  
~~electroluminescent~~ diodes  
AUTHOR(S): Adachi, Chihaya; Nagai, Kazukiyo; Tamoto, Nozomu  
CORPORATE SOURCE: Chemical Products R and D Center, Ricoh Co., Ltd.,  
Shizuoka, 410, Japan  
SOURCE: Applied Physics Letters (1995), 66(20), 2679-81  
CODEN: APPLAB; ISSN: 0003-6951  
PUBLISHER: American Institute of Physics  
DOCUMENT TYPE: Journal  
LANGUAGE: English

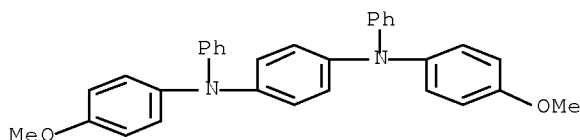
AB The mol. design of hole transport materials (HTMs) for producing high  
durability in organic layered ~~electroluminescent~~ (EL) diodes was elucidated.  
The durability tests were examined using 14 hole transport materials in the  
cell structure of an anode/hole transport layer (HTL)/emitter layer  
(EML)/cathode. The ionization potential (Ip) of HTLs is the dominant factor  
for obtaining high durability in organic EL devices. The formation of the  
small energy barrier at the interface of a HTL/anode was required for high  
durability. Also, no straightforward relations between m.p., glass transition  
temperature of the HTMs, and durability of the EL devices were observed The  
EL device using the HTM having a low Ip (5.08 eV) showed an especially  
remarkable stability. In this case, the half-life period of the initial  
luminance was beyond 500 h.

IT 124526-50-7 138171-14-9

RL: DEV (Device component use); USES (Uses)  
(hole transport material for obtaining high durability in organic  
~~electroluminescent~~ diodes)

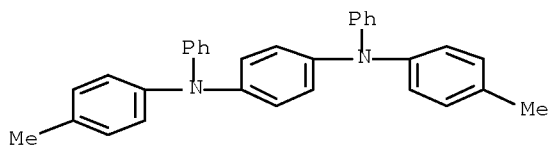
RN 124526-50-7 CAPLUS

CN 1,4-Benzenediamine, N1,N4-bis(4-methoxyphenyl)-N1,N4-diphenyl- (CA INDEX  
NAME)



RN 138171-14-9 CAPLUS

CN 1,4-Benzenediamine, N1,N4-bis(4-methylphenyl)-N1,N4-diphenyl- (CA INDEX  
NAME)

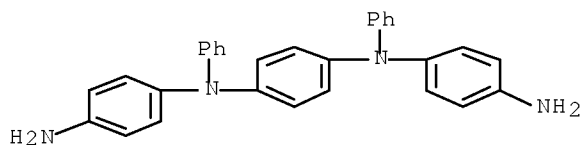


OS.CITING REF COUNT: 258 THERE ARE 258 CAPLUS RECORDS THAT CITE THIS RECORD (261 CITINGS)

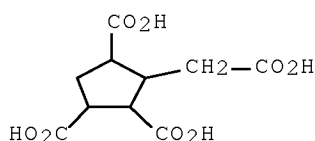
L5 ANSWER 437 OF 440 CAPLUS COPYRIGHT 2010 ACS on STN  
 ACCESSION NUMBER: 1995:561327 CAPLUS Full-text  
 DOCUMENT NUMBER: 122:302641  
 ORIGINAL REFERENCE NO.: 122:54869a,54872a  
 TITLE: Organic thin-film ~~electroluminescence~~ device  
 INVENTOR(S): Ito, Juichi  
 PATENT ASSIGNEE(S): Toppan Printing Co Ltd, Japan  
 SOURCE: Jpn. Kokai Tokkyo Koho, 9 pp.  
 CODEN: JKXXAF  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Japanese  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 06338392	A	19941206	JP 1993-126717	19930528
JP 2848189	B2	19990120		

PRIORITY APPLN. INFO.: JP 1993-126717 19930528  
 AB The title device, wherein the hole injection/transport layer comprises a aliphatic tetracarboxylic anhydride-based polyimide.  
 IT 163185-95-3  
 RL: DEV (Device component use); USES (Uses)  
 (aliphatic tetracarboxylic anhydride hole injection/transport layer in ~~electroluminescent~~ devices)  
 RN 163185-95-3 CAPLUS  
 CN 1,2,4-Cyclopentanetricarboxylic acid, 3-(carboxymethyl)-, polymer with N,N'-bis(4-aminophenyl)-N,N'-diphenyl-1,4-benzenediamine (9CI) (CA INDEX NAME)  
 CM 1  
 CRN 111341-76-5  
 CMF C30 H26 N4



CRN 24434-90-0  
CMF C10 H12 O8



OS.CITING REF COUNT: 4 THERE ARE 4 CAPLUS RECORDS THAT CITE THIS RECORD  
(4 CITINGS)

L5 ANSWER 438 OF 440 CAPLUS COPYRIGHT 2010 ACS on STN  
ACCESSION NUMBER: 1994:545550 CAPLUS Full-text  
DOCUMENT NUMBER: 121:145550  
ORIGINAL REFERENCE NO.: 121:26101a,26104a  
TITLE: Organic thin-film electroluminescent element  
INVENTOR(S): Adachi, Chihaya; Oota, Masabumi; Sakon, Hirota;  
Takahashi, Toshihiko  
PATENT ASSIGNEE(S): Ricoh Kk, Japan  
SOURCE: Jpn. Kokai Tokkyo Koho, 7 pp.  
CODEN: JKXXAF  
DOCUMENT TYPE: Patent  
LANGUAGE: Japanese  
FAMILY ACC. NUM. COUNT: 1  
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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JP 05299174	A	19931112	JP 1992-126815	19920420

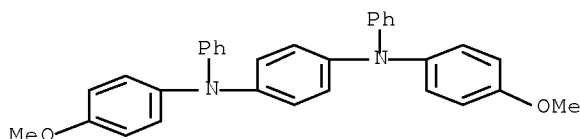
PRIORITY APPLN. INFO.: JP 1992-126815 19920420

AB In the title element comprising an anode, a cathode, and 1 or a plurality of organic compound layers sandwiched by the anode and cathode, the relative difference of the ionization potentials of the anode (preferably an ITO electrode) and an organic compound layer (may be organic hole transport layer, organic hole transport light-emitting layer, or a single light-emitting organic compound layer) in contact with the anode is <0.85 eV. The electroluminescent element shows high initial luminance-maintaining ratio and superior durability.

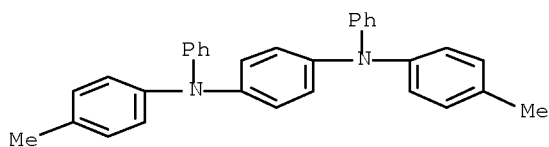
IT 124526-50-7 138171-14-9  
RL: USES (Uses)  
(organic thin-film electroluminescent element with hole transport layer of, ionization potential of)

RN 124526-50-7 CAPLUS

CN 1,4-Benzenediamine, N1,N4-bis(4-methoxyphenyl)-N1,N4-diphenyl- (CA INDEX NAME)



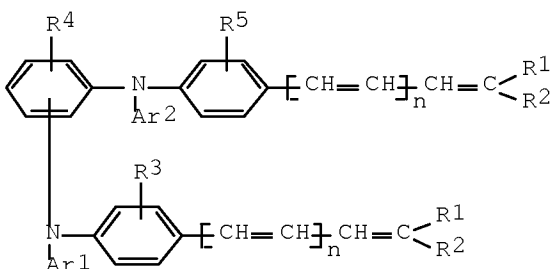
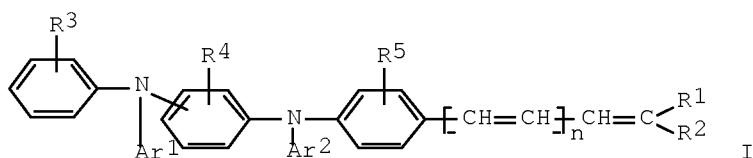
RN 138171-14-9 CAPLUS  
 CN 1,4-Benzenediamine, N1,N4-bis(4-methylphenyl)-N1,N4-diphenyl- (CA INDEX NAME)



L5 ANSWER 439 OF 440 CAPLUS COPYRIGHT 2010 ACS on STN  
 ACCESSION NUMBER: 1994:496254 CAPLUS Full-text  
 DOCUMENT NUMBER: 121:96254  
 ORIGINAL REFERENCE NO.: 121:17071a,17074a  
 TITLE: Organic electroluminescence device  
 INVENTOR(S): Suzuki, Shinichi; Shibata, Toyoko; Takeuchi, Shigeki  
 PATENT ASSIGNEE(S): Konishiroku Photo Ind, Japan  
 SOURCE: Jpn. Kokai Tokkyo Koho, 28 pp.  
 CODEN: JKXXAF  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Japanese  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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JP 06017046	A	19940125	JP 1992-173177	19920630
PRIORITY APPLN. INFO.:			JP 1992-173177	19920630
OTHER SOURCE(S):	MARPAT	121:96254		

GI



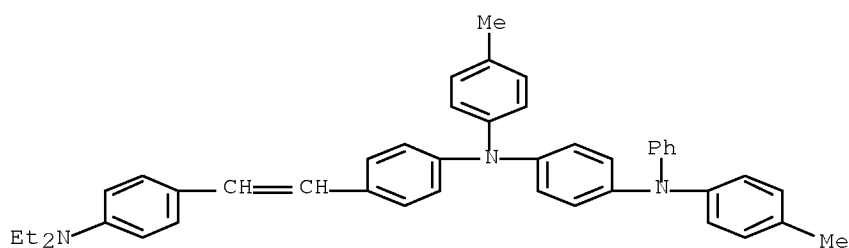
AB The title device, suited for use as a flat-panel display or a plane light source, comprises  $\geq 1$  layer containing I or II [R1, R3 = H, (substituted) alkyl, aryl, aralkyl, heterocyclyl, provided that R1 and R2 may not both be H, and R1 and R2 may together form a ring; R3, R4, R5 = H, halo, alkyl, alkoxy; Ar1, Ar2 = (substituted) alkyl, aryl, aralkyl; n = 0, 1].

IT 131312-31-7 131660-34-9 131660-38-3  
 156204-52-3 156204-58-9 156204-59-0  
 156204-60-3 156204-61-4 156204-62-5  
 156204-63-6

RL: DEV (Device component use); USES (Uses)  
 (electroluminescent device from)

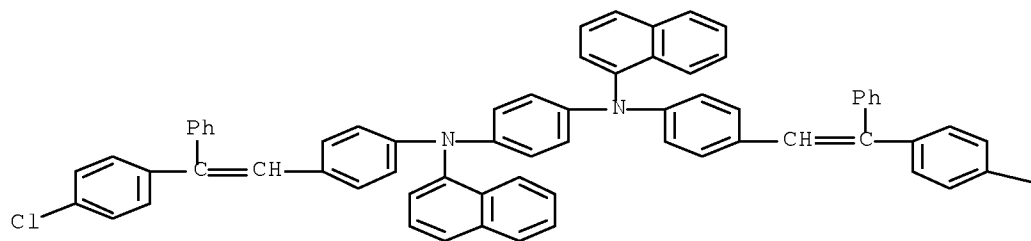
RN 131312-31-7 CAPLUS

CN 1,4-Benzenediamine, N1-[4-[2-[4-(diethylamino)phenyl]ethenyl]phenyl]-N1,N4-bis(4-methylphenyl)-N4-phenyl- (CA INDEX NAME)



RN 131660-34-9 CAPLUS

CN 1,4-Benzenediamine, N1,N4-bis[4-[2-(4-chlorophenyl)-2-phenylethenyl]phenyl]-N1,N4-di-1-naphthalenyl- (CA INDEX NAME)



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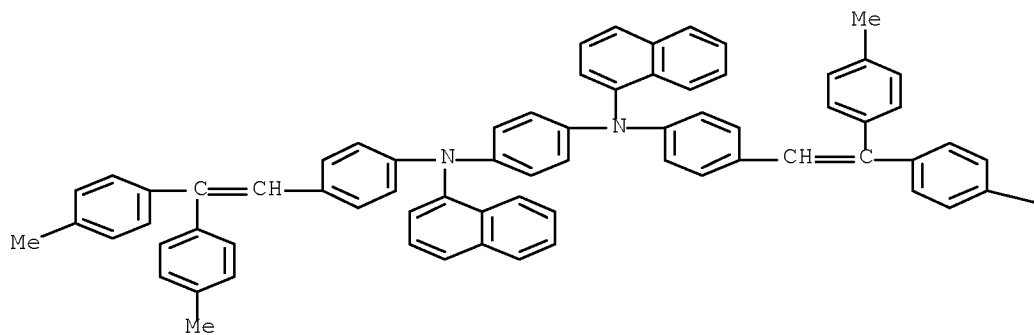
PAGE 1-B

-Cl

RN 131660-38-3 CAPLUS

CN 1,4-Benzenediamine, N1,N4-bis[4-[2,2-bis(4-methylphenyl)ethenyl]phenyl]-  
N1,N4-di-1-naphthalenyl- (CA INDEX NAME)

PAGE 1-A

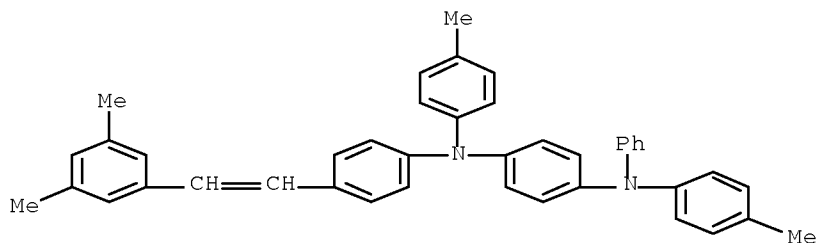


PAGE 1-B

Me

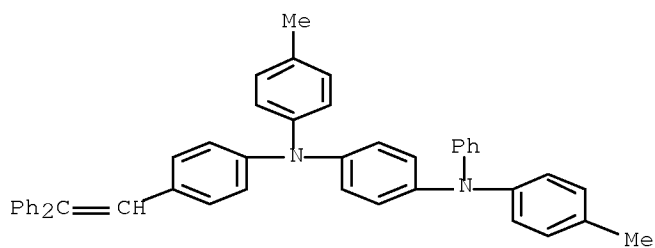
RN 156204-52-3 CAPLUS

CN 1,4-Benzenediamine, N1-[4-[2-(3,5-dimethylphenyl)ethenyl]phenyl]-N1,N4-  
bis(4-methylphenyl)-N4-phenyl- (CA INDEX NAME)



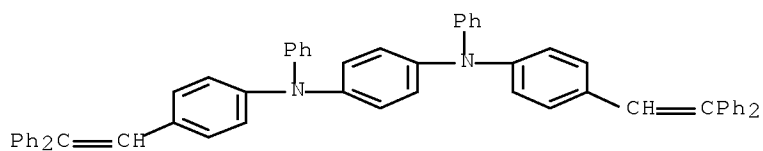
RN 156204-58-9 CAPLUS

CN 1,4-Benzenediamine, N1-[4-(2,2-diphenylethenyl)phenyl]-N1,N4-bis(4-  
methylphenyl)-N4-phenyl- (CA INDEX NAME)



RN 156204-59-0 CAPLUS

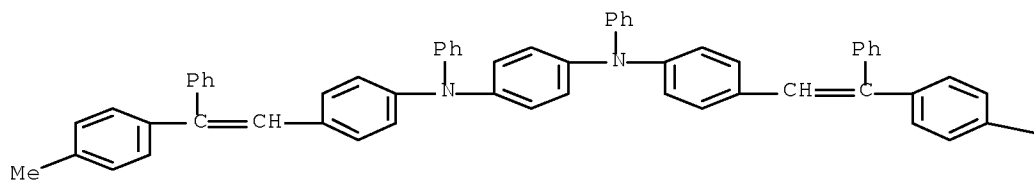
CN 1,4-Benzenediamine, N1,N4-bis[4-(2,2-diphenylethenyl)phenyl]-N1,N4-diphenyl- (CA INDEX NAME)



RN 156204-60-3 CAPLUS

CN 1,4-Benzenediamine, N1,N4-bis[4-[2-(4-methylphenyl)-2-phenylethenyl]phenyl]-N1,N4-diphenyl- (CA INDEX NAME)

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PAGE 1-B

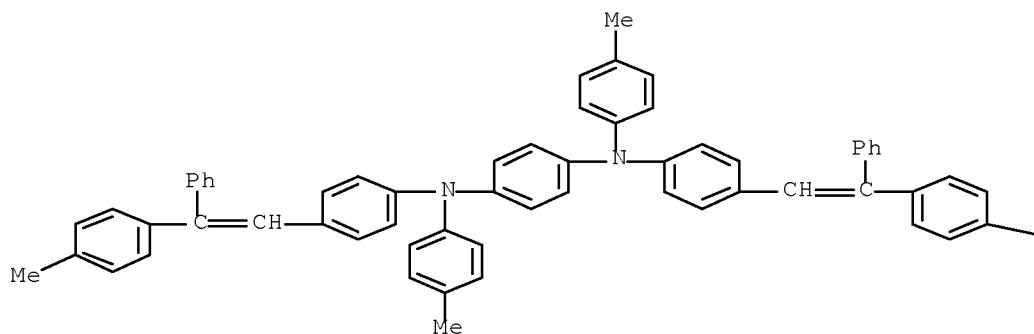


RN 156204-61-4 CAPLUS

CN 1,4-Benzenediamine, N1,N4-bis(4-methylphenyl)-N1,N4-bis[4-[2-(4-methylphenyl)-2-phenylethenyl]phenyl]- (CA INDEX NAME)



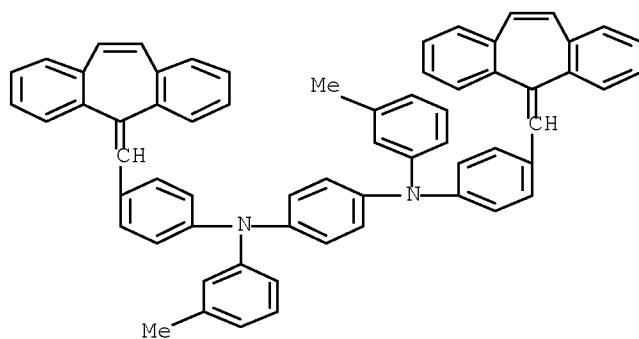
PAGE 1-A



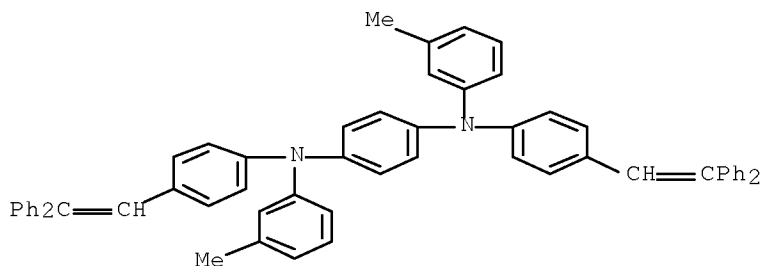
PAGE 1-B

Me

RN 156204-62-5 CAPLUS  
 CN 1,4-Benzenediamine, N1,N4-bis[4-(5H-dibenzo[a,d]cyclohepten-5-ylidenemethyl)phenyl]-N1,N4-bis(3-methylphenyl)- (CA INDEX NAME)



RN 156204-63-6 CAPLUS  
 CN 1,4-Benzenediamine, N1,N4-bis[4-(2,2-diphenylethenyl)phenyl]-N1,N4-bis(3-methylphenyl)- (CA INDEX NAME)



L5 ANSWER 440 OF 440 CAPLUS COPYRIGHT 2010 ACS on STN  
 ACCESSION NUMBER: 1994:231406 CAPLUS Full-text  
 DOCUMENT NUMBER: 120:231406  
 ORIGINAL REFERENCE NO.: 120:40761a,40764a  
 TITLE: Organic thin film electroluminescent device  
 including polyamide hole-transporting layer  
 INVENTOR(S): Ito, Juichi  
 PATENT ASSIGNEE(S): Toppan Printing Co Ltd, Japan  
 SOURCE: Jpn. Kokai Tokkyo Koho, 11 pp.  
 CODEN: JKXXAF  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Japanese  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 05311163	A	19931122	JP 1992-114692	19920507
PRIORITY APPLN. INFO.:			JP 1992-114692	19920507

AB The title device involves at least an anode, a hole-implanting and transporting layer containing a polyamide of [p-CORC(O)NHC6H4-p-N(A1)A2N(A1)C6H4NH]n (R = dicarboxylic acid residue; A1= aryl; A2 = aromatic diamine residue), a light-emitting layer, and a cathode. The device including the polyamide (e.g., isophthaloyl chloride-N,N'-diphenyl-N,N'-bis(4-aminophenyl)-p-phenylenediamine copolymer) may be manufactured by a high-temperature process, such as spin coating at  $\geq 100^\circ$ .

IT 152197-05-2P 152220-19-4P

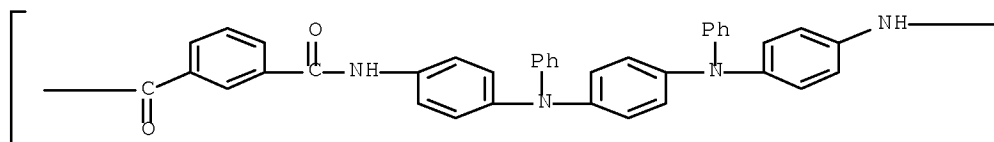
RL: PREP (Preparation)

(preparation of, for hole-implanting and transporting layer for electroluminescent device)

RN 152197-05-2 CAPLUS

CN Poly[imino-1,4-phenylene(phenylimino)-1,4-phenylene(phenylimino)-1,4-phenyleneiminocarbonyl-1,3-phenylenecarbonyl] (CA INDEX NAME)

PAGE 1-A

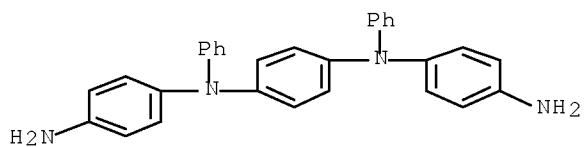


$$\left[ \text{---} \right]_n$$

RN 152220-19-4 CAPLUS  
 CN 1,3-Benzenedicarbonyl dichloride, polymer with  
 N,N'-bis(4-aminophenyl)-N,N'-diphenyl-1,4-benzenediamine (9CI) (CA INDEX  
 NAME)

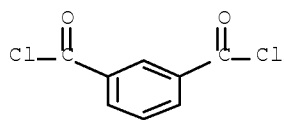
CM 1

CRN 111341-76-5  
 CMF C30 H26 N4



CM 2

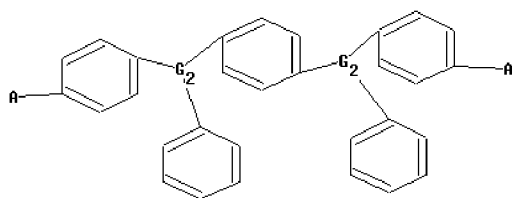
CRN 99-63-8  
 CMF C8 H4 Cl2 O2



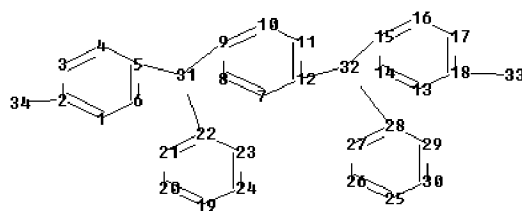
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G<sub>2</sub>-Hy-G<sub>2</sub>



42-39-48

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chain nodes :
31 32 33 34 39 40 42
ring nodes :
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23
24 25 26 27 28 29 30
chain bonds :
2-34 5-31 9-31 12-32 15-32 18-33 22-31 28-32 39-40 39-42
ring bonds :
1-2 1-6 2-3 3-4 4-5 5-6 7-8 7-12 8-9 9-10 10-11 11-12 13-14 13-18 14-
15
15-16 16-17 17-18 19-20 19-24 20-21 21-22 22-23 23-24 25-26 25-30 26-27
27-28 28-29
29-30
exact/norm bonds :
2-34 5-31 9-31 12-32 15-32 18-33 22-31 28-32 39-40 39-42
normalized bonds :
1-2 1-6 2-3 3-4 4-5 5-6 7-8 7-12 8-9 9-10 10-11 11-12 13-14 13-18 14-
15
15-16 16-17 17-18 19-20 19-24 20-21 21-22 22-23 23-24 25-26 25-30 26-27
27-28 28-29
29-30
isolated ring systems :
containing 1 : 7 : 13 : 19 : 25 :

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G1: Ak, H

G2: N, P

G3: B, X

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Match level :
1:Atom 2:Atom 3:Atom 4:Atom 5:Atom 6:Atom 7:Atom 8:Atom 9:Atom 10:Atom
11:Atom 12:Atom 13:Atom 14:Atom 15:Atom 16:Atom 17:Atom 18:Atom 19:Atom
20:Atom 21:Atom
22:Atom 23:Atom 24:Atom 25:Atom 26:Atom 27:Atom 28:Atom 29:Atom 30:Atom
31:CLASS 32:CLASS
33:CLASS 34:CLASS 39:Atom 40:CLASS 42:CLASS
Generic attributes :
39:
Saturation : Unsaturated

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=> s l1 full  
FULL SEARCH INITIATED 15:11:06 FILE 'REGISTRY'  
FULL SCREEN SEARCH COMPLETED - 9757 TO ITERATE

100.0% PROCESSED 9757 ITERATIONS 1783 ANSWERS  
SEARCH TIME: 00.00.01

L2 1783 SEA SSS FUL L1

This file contains CAS Registry Numbers for easy and accurate  
substance identification.

=> s l2  
L3 1050 L2

=> s l2 and electrolumin?  
1050 L2  
100932 ELECTROLUMIN?  
L4 440 L2 AND ELECTROLUMIN?

=> d ibib abs hitstr 419-429

L4 ANSWER 419 OF 440 CAPLUS COPYRIGHT 2010 ACS on STN  
ACCESSION NUMBER: 1998:204546 CAPLUS Full-text  
DOCUMENT NUMBER: 128:263735  
ORIGINAL REFERENCE NO.: 128:52077a,52080a  
TITLE: Organic electroluminescent element with  
exciplex-forming materials  
INVENTOR(S): Boerner, Herbert; Busselt, Wolfgang; Justel, Thomas;  
Nikol, Hans  
PATENT ASSIGNEE(S): Philips Patentverwaltung G.m.b.H., Germany; Philips  
Electronics N.V.; Koninklijke Philips Electronics NV  
SOURCE: Eur. Pat. Appl., 11 pp.  
CODEN: EPXXDW  
DOCUMENT TYPE: Patent  
LANGUAGE: German  
FAMILY ACC. NUM. COUNT: 1  
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
-----	----	-----	-----	-----
EP 831676	A2	19980325	EP 1997-202820	19970915
EP 831676	A3	19980715		
EP 831676	B1	20040107		
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, FI				
DE 19638770	A1	19980326	DE 1996-19638770	19960921
US 5955836	A	19990921	US 1997-933292	19970918
JP 10106748	A	19980424	JP 1997-256865	19970922

PRIORITY APPLN. INFO.: DE 1996-19638770 A 19960921

ASSIGNMENT HISTORY FOR US PATENT AVAILABLE IN LSUS DISPLAY FORMAT

AB Electroluminescent devices are described which have an organic active layer  
comprising a mixture of a hole-transporting material and an electron-  
transporting material which form an exciplex.

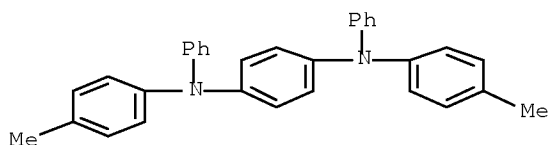
IT 138171-14-9

RL: DEV (Device component use); USES (Uses)  
(organic electroluminescent elements with exciplex-forming

materials)

RN 138171-14-9 CAPLUS

CN 1,4-Benzenediamine, N1,N4-bis(4-methylphenyl)-N1,N4-diphenyl- (CA INDEX NAME)



OS.CITING REF COUNT: 9 THERE ARE 9 CAPLUS RECORDS THAT CITE THIS RECORD (9 CITINGS)

L4 ANSWER 420 OF 440 CAPLUS COPYRIGHT 2010 ACS on STN

ACCESSION NUMBER: 1998:175869 CAPLUS Full-text

DOCUMENT NUMBER: 128:223710

ORIGINAL REFERENCE NO.: 128:44195a,44198a

TITLE: Heat-resistant organic electroluminescent device

INVENTOR(S): Antoniadis, Homer; Roitman, Daniel B.; Shiang, William R.; Woo, Edmund P.; Wu, Weishi

PATENT ASSIGNEE(S): Hewlett-Packard Co., USA; Dow Chemical Co.

SOURCE: Eur. Pat. Appl., 19 pp.

CODEN: EPXXDW

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

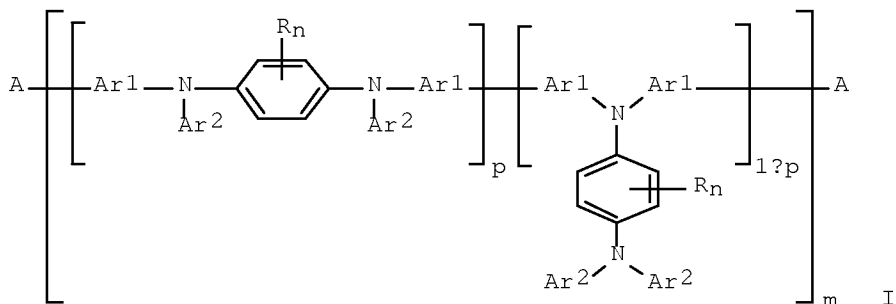
PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 827366	A2	19980304	EP 1997-114846	19970827
EP 827366	A3	19980819		
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, FI				
US 5948552	A	19990907	US 1996-704476	19960827
JP 10092582	A	19980410	JP 1997-244868	19970827

PRIORITY APPLN. INFO.: US 1996-704476 A 19960827

ASSIGNMENT HISTORY FOR US PATENT AVAILABLE IN LSUS DISPLAY FORMAT

OTHER SOURCE(S): MARPAT 128:223710

GI



AB Organic electroluminescent devices comprising a substrate, a transparent first conductive layer next to the substrate, an electron-transporting and light-emitting layer, a hole-transporting layer sandwiched between the first conductive layer and the electron-transporting and light-emitting layer, and a second conductive layer next to the electron-transporting and light-emitting layer and remote from the hole-transporting layer are described in which the hole-transporting layer comprises a poly(arylamine) described by the general formula I (R = independently selected C1-24 hydrocarbyl, hydrocarboxyl, hydrothiocarboxy, hydroarylcarboxy, or hydrothioarylcarboxy groups; Ar1 and Ar2 = independently selected C6-18 aryl groups optionally substituted with  $\geq 1$  C1-24 hydrocarbyl, hydrocarboxyl, hydrothiocarboxy, hydroarylcarboxy, or hydrothioarylcarboxy groups; A = independently selected groups selected from H and halogens; p = 0-1; n = 0-4; and m = 5-1000).

IT 113703-67-6P 202873-05-0P

RL: DEV (Device component use); PRP (Properties); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)

(heat-resistant organic electroluminescent devices with polyarylamine hole-transporting layers)

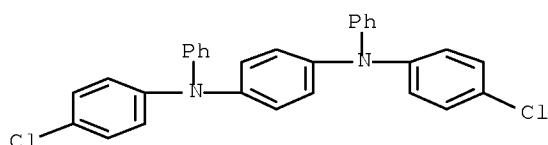
RN 113703-67-6 CAPLUS

CN 1,4-Benzenediamine, N,N'-bis(4-chlorophenyl)-N,N'-diphenyl-, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 113703-66-5

CMF C30 H22 Cl2 N2



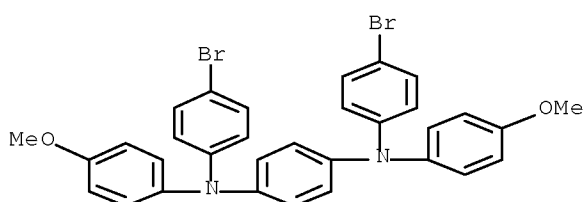
RN 202873-05-0 CAPLUS

CN 1,4-Benzenediamine, N,N'-bis(4-bromophenyl)-N,N'-bis(4-methoxyphenyl)-, homopolymer (9CI) (CA INDEX NAME)

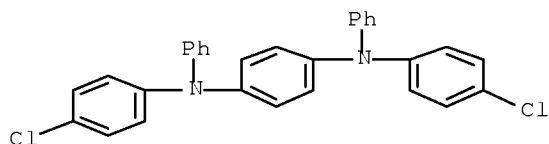
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CRN 202873-04-9

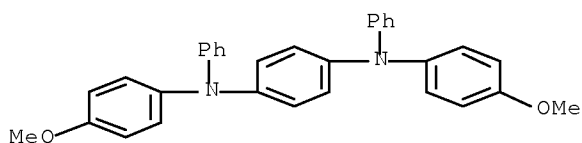
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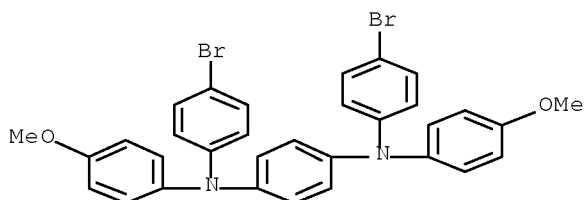
IT 113703-66-5P 124526-50-7P 202873-04-9P  
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT  
 (Reactant or reagent)  
 (heat-resistant organic **electroluminescent** devices with  
 polyarylamine hole-transporting layers)  
 RN 113703-66-5 CAPLUS  
 CN 1,4-Benzenediamine, N1,N4-bis(4-chlorophenyl)-N1,N4-diphenyl- (CA INDEX  
 NAME)



RN 124526-50-7 CAPLUS  
 CN 1,4-Benzenediamine, N1,N4-bis(4-methoxyphenyl)-N1,N4-diphenyl- (CA INDEX  
 NAME)



RN 202873-04-9 CAPLUS  
 CN 1,4-Benzenediamine, N1,N4-bis(4-bromophenyl)-N1,N4-bis(4-methoxyphenyl)-  
 (CA INDEX NAME)



OS.CITING REF COUNT: 19 THERE ARE 19 CAPLUS RECORDS THAT CITE THIS  
 RECORD (19 CITINGS)

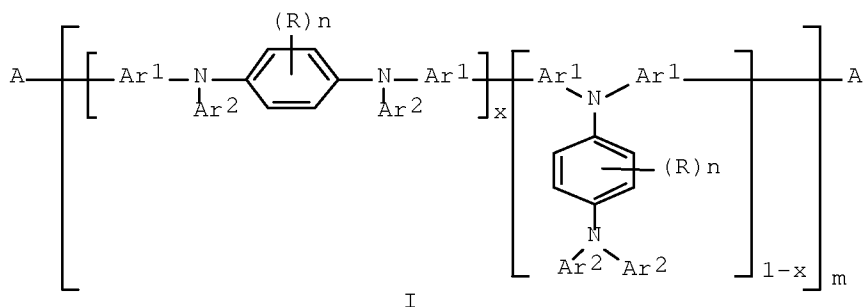
L4 ANSWER 421 OF 440 CAPLUS COPYRIGHT 2010 ACS on STN  
 ACCESSION NUMBER: 1998:126295 CAPLUS Full-text  
 DOCUMENT NUMBER: 128:180801  
 ORIGINAL REFERENCE NO.: 128:35685a,35688a



TITLE: Polyarylamines, their preparation, and films thereof  
 INVENTOR(S): Wu, Weishi; Shiang, William R.; Woo, Edmund P.  
 PATENT ASSIGNEE(S): Dow Chemical Company, USA  
 SOURCE: PCT Int. Appl., 25 pp.  
 CODEN: PIXXD2  
 DOCUMENT TYPE: Patent  
 LANGUAGE: English  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 9806773	A1	19980219	WO 1997-US12478	19970714
W: JP, KR				
RW: AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE				
US 5728801	A	19980317	US 1996-696281	19960813
EP 918811	A1	19990602	EP 1997-939338	19970714
EP 918811	B1	20001227		
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, FI				
AT 198338	T	20010115	AT 1997-939338	19970714
JP 2001503074	T	20010306	JP 1998-509717	19970714
JP 4172821	B2	20081029		
KR 2000029916	A	20000525	KR 1999-701113	19990210
JP 2008069367	A	20080327	JP 2007-279072	20071026
PRIORITY APPLN. INFO.:			US 1996-696281	A 19960813
			JP 1998-509717	A3 19970714
			WO 1997-US12478	W 19970714

ASSIGNMENT HISTORY FOR US PATENT AVAILABLE IN LSUS DISPLAY FORMAT  
 GI



AB A poly(arylamine) composition comprises one or more compds. of structure I (R = C1-24 hydrocarbyl, C1-24 hydrocarboxy, C1-24 hydrocarbylthiooxy, C1-24 hydrocarbylcarboxyl; Ar1, Ar2 = C6-18 aryl, C1-12 hydrocarbyl-, C1-12 hydrocarbyloxy-, C1-12 hydrocarbylthiooxy-, C1-12 hydrocarbylcarboxyl-substituted C6-18 aryl, A = H, halogen; x = 0, 1; n = 0-4; m = 5-1000). The monomers useful in the preparation of polyarylamines comprise two amino moieties wherein each amino moiety is bound to three aryl moieties wherein two halo moieties are optionally bound to the monomer. The invention further relates to films prepared from such polyarylamines, as well as electrophotog. devices and ~~electroluminescent~~ electroluminescent devices containing such films, such as

polymeric light-emitting diodes. The invention also relates to processes for the preparation of polyarylamines.

IT 113703-67-6P 202873-05-0P

RL: IMF (Industrial manufacture); PRP (Properties); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
(polyarylamines, their preparation, and films thereof)

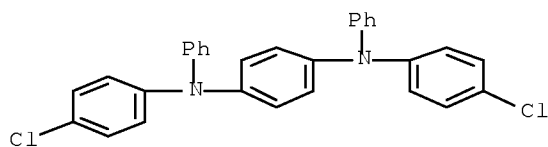
RN 113703-67-6 CAPLUS

CN 1,4-Benzenediamine, N,N'-bis(4-chlorophenyl)-N,N'-diphenyl-, homopolymer (9CI) (CA INDEX NAME)

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CRN 113703-66-5

CMF C30 H22 Cl2 N2



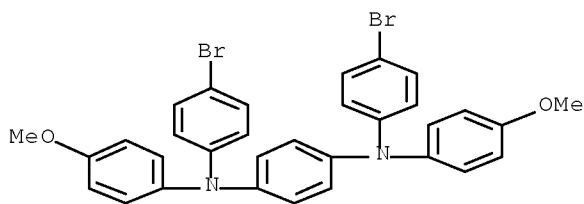
RN 202873-05-0 CAPLUS

CN 1,4-Benzenediamine, N,N'-bis(4-bromophenyl)-N,N'-bis(4-methoxyphenyl)-, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 202873-04-9

CMF C32 H26 Br2 N2 O2

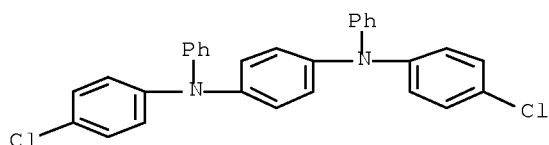


IT 113703-66-5P 124526-50-7P 202873-04-9P

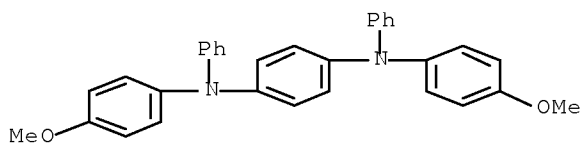
RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)  
(polyarylamines, their preparation, and films thereof)

RN 113703-66-5 CAPLUS

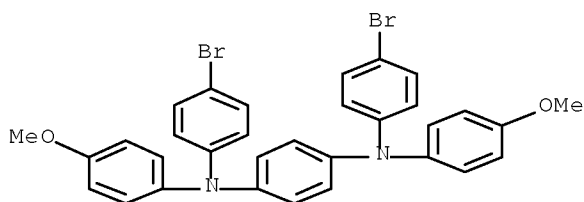
CN 1,4-Benzenediamine, N1,N4-bis(4-chlorophenyl)-N1,N4-diphenyl- (CA INDEX NAME)



RN 124526-50-7 CAPLUS  
 CN 1,4-Benzenediamine, N1,N4-bis(4-methoxyphenyl)-N1,N4-diphenyl- (CA INDEX NAME)



RN 202873-04-9 CAPLUS  
 CN 1,4-Benzenediamine, N1,N4-bis(4-bromophenyl)-N1,N4-bis(4-methoxyphenyl)- (CA INDEX NAME)



OS.CITING REF COUNT: 28 THERE ARE 28 CAPLUS RECORDS THAT CITE THIS RECORD (33 CITINGS)  
 REFERENCE COUNT: 3 THERE ARE 3 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L4 ANSWER 422 OF 440 CAPLUS COPYRIGHT 2010 ACS on STN

ACCESSION NUMBER: 1998:116628 CAPLUS Full-text

DOCUMENT NUMBER: 128:173587

ORIGINAL REFERENCE NO.: 128:34101a,34104a

TITLE: A novel class of  $\pi$ -electron dendrimers for thermally and morphologically stable amorphous molecular materials

AUTHOR(S): Katsuma, Katsuhiko; Shirota, Yasuhiko

CORPORATE SOURCE: Department Applied Chemistry, Faculty Engineering, Osaka University, Suita, 565, Japan

SOURCE: Advanced Materials (Weinheim, Germany) (1998), 10(3), 223-226

CODEN: ADVMEW; ISSN: 0935-9648

PUBLISHER: Wiley-VCH Verlag GmbH

DOCUMENT TYPE: Journal

LANGUAGE: English

AB The novel organic hyperbranched  $\pi$ -electron systems, 1,3,5-tris[N-(4'-methylbiphenyl-4-yl)-N-(4-diphenylaminophenyl)amino]benzene (TDAB-G1(a)) and 1,3,5-tris[N-[4-bis(4-methylphenyl)aminophenyl]-N-(4-diphenylaminophenyl)amino]benzene (TDAB-G1(b)), were synthesized via the Ullmann reaction and characterized by  $^1\text{H}$ -,  $^{13}\text{C}$ -NMR, electron absorption spectroscopy, and elemental anal. TDAB-G1(a) was obtained as a polycryst. material, whereas TDAB-G1(b) was an amorphous glass. DSC anal. of TDAB-G1(a) gave a m.p. of  $187^\circ$ . When the melted sample was cooled in air, a glass was formed spontaneously. Reheating of the glass sample resulted in a glass transition at  $T_g = 128^\circ$  giving a supercooled liquid. Likewise, the amorphous repptd. sample of TDAB-G1(b) exhibited a glass transition at  $T_g = 134^\circ$  when heated. Unique multiredox processes involving as many as 6- and 9-electron reversible oxidns. were observed in the cyclic voltammograms of TDAB-G1(a) and TDAB-G1(b), resp. TDAB-G1(b) was used as a hole-transport material in a multilayer organic LED consisting of the double-hole transport layer and an emitting layer which contained N,N'-diphenyl-N,N'-bis(3-methylphenyl)-[1,1'-biphenyl]-4,4'-diamine (TPD) doped with rubrene as the emitting material and with tris(8-quinolinolato) Al as the electron transport material. This device emitted yellow light and the electroluminescence showed a peak at 560 nm in agreement with the luminescence peak of rubrene.

IT 874946-05-1P

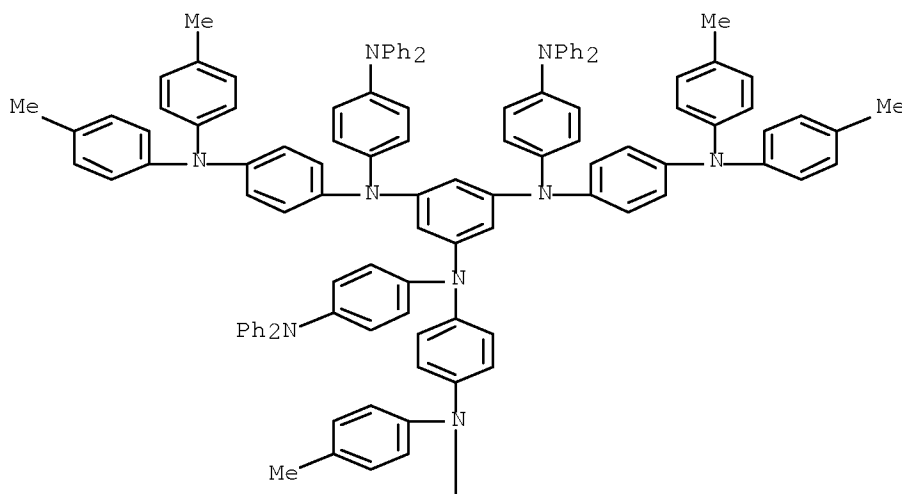
RL: SPN (Synthetic preparation); PRP (Properties); PREP (Preparation)

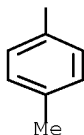
(A novel class of  $\pi$ -electron dendrimers for thermally and morphologically stable amorphous molecular materials)

RN 874946-05-1 CAPLUS

CN 1,3,5-Benzenetriamine, N1,N3,N5-tris[4-[bis(4-methylphenyl)amino]phenyl]-N1,N3,N5-tris[4-(diphenylamino)phenyl]- (CA INDEX NAME)

PAGE 1-A





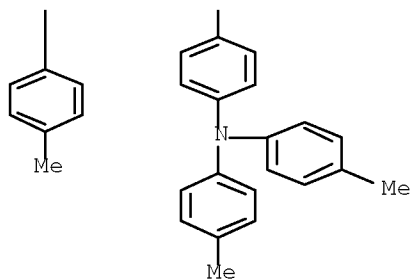
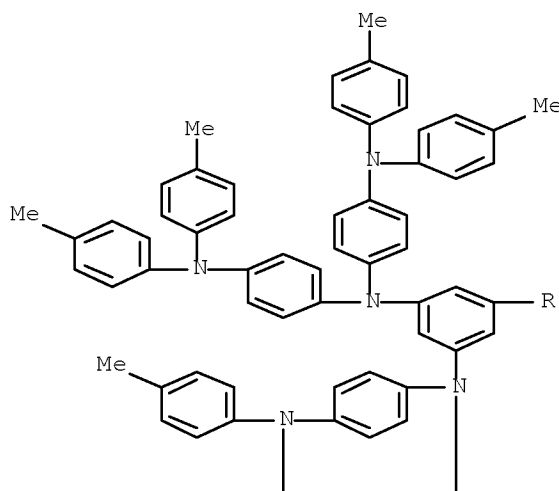
IT 202868-45-9P

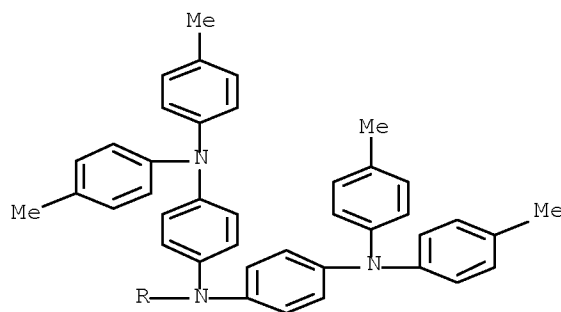
RL: DEV (Device component use); PEP (Physical, engineering or chemical process); PRP (Properties); SPN (Synthetic preparation); PREP (Preparation); PROC (Process); USES (Uses)

(preparation, glass transition, redox potential, and application in LED as hole transport material of)

RN 202868-45-9 CAPLUS

CN 1,3,5-Benzenetriamine, N1,N1,N3,N3,N5,N5-hexakis[4-[bis(4-methylphenyl)amino]phenyl]- (CA INDEX NAME)

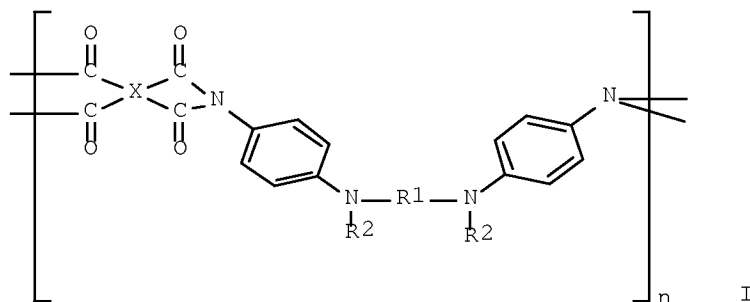




OS.CITING REF COUNT: 111 THERE ARE 111 CAPLUS RECORDS THAT CITE THIS RECORD (111 CITINGS)

L4 ANSWER 423 OF 440 CAPLUS COPYRIGHT 2010 ACS on STN  
 ACCESSION NUMBER: 1997:743868 CAPLUS Full-text  
 DOCUMENT NUMBER: 128:68313  
 ORIGINAL REFERENCE NO.: 128:13227a,13230a  
 TITLE: Hole transport material and organic electroluminescent device  
 INVENTOR(S): Uekawa, Masahiro; Nakaya, Tadao  
 PATENT ASSIGNEE(S): Oki Electric Industry Co., Ltd., Japan  
 SOURCE: Jpn. Kokai Tokkyo Koho, 11 pp.  
 CODEN: JKXXAF  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Japanese  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 09298089	A	19971118	JP 1996-111352	19960502
PRIORITY APPLN. INFO.: GI			JP 1996-111352	19960502



AB A hole transport material used in organic electroluminescent device is a polyimide represented by I [X = benzene ring-containing group; R1-2 = aromatic group]. The claimed hole transport material has excellent heat-resistant properties, thereby enhancing the device lifetime.

IT 200192-09-2P

RL: DEV (Device component use); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)  
(hole transport material and organic electroluminescent device)

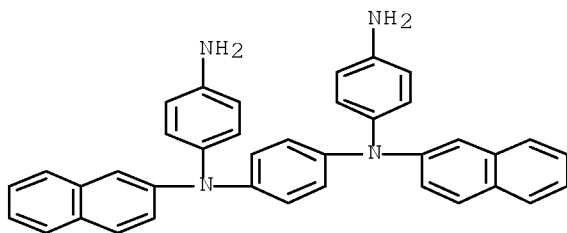
RN 200192-09-2 CAPLUS

CN [5,5'-Biisobenzofuran]-1,1',3,3'-tetrone, polymer with  
N,N'-bis(4-aminophenyl)-N,N'-di-2-naphthalenyl-1,4-benzenediamine (9CI)  
(CA INDEX NAME)

CM 1

CRN 200192-07-0

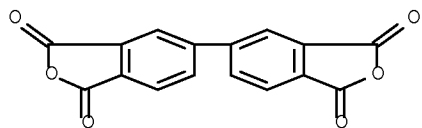
CMF C38 H30 N4



CM 2

CRN 2420-87-3

CMF C16 H6 O6

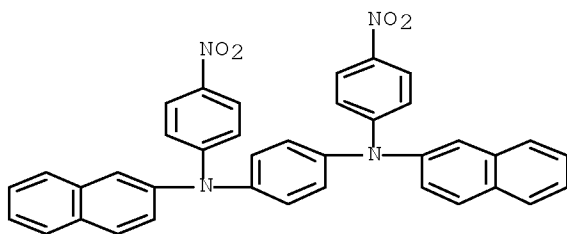


IT 200192-05-8P 200192-07-0P

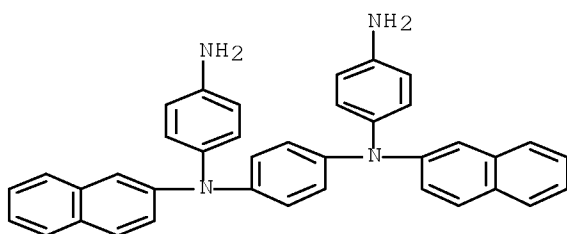
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)  
(hole transport material and organic electroluminescent device)

RN 200192-05-8 CAPLUS

CN 1,4-Benzenediamine, N1,N4-di-2-naphthalenyl-N1,N4-bis(4-nitrophenyl)- (CA INDEX NAME)



RN 200192-07-0 CAPLUS  
 CN 1,4-Benzenediamine, N1,N4-bis(4-aminophenyl)-N1,N4-di-2-naphthalenyl- (CA  
 INDEX NAME)

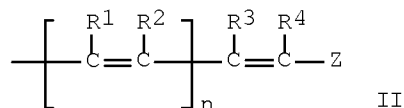
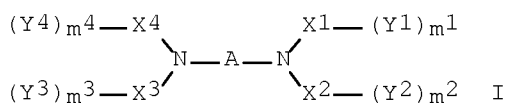


OS.CITING REF COUNT: 2 THERE ARE 2 CAPLUS RECORDS THAT CITE THIS RECORD  
 (2 CITINGS)

L4 ANSWER 424 OF 440 CAPLUS COPYRIGHT 2010 ACS on STN  
 ACCESSION NUMBER: 1997:678708 CAPLUS Full-text  
 DOCUMENT NUMBER: 128:17237  
 ORIGINAL REFERENCE NO.: 128:3255a,3258a  
 TITLE: Organic electroluminescent device elements  
 INVENTOR(S): Enokida, Toshio; Tamano, Michiko  
 PATENT ASSIGNEE(S): Toyo Ink Mfg. Co., Ltd., Japan  
 SOURCE: Jpn. Kokai Tokkyo Koho, 33 pp.  
 CODEN: JKXXAF  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Japanese  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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JP 09268284	A	19971014	JP 1996-78501	19960401
JP 3564859	B2	20040915		
PRIORITY APPLN. INFO.:			JP 1996-78501	19960401
OTHER SOURCE(S):	MARPAT	128:17237		
GI				



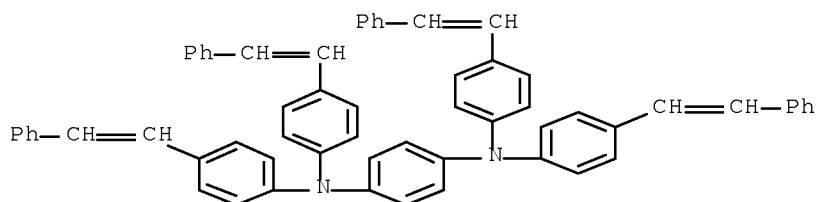


AB The elements comprise the phosphors I containing II; I [A, X1-4 = C2-20 arylene; m1, m2, m3, m4 = 0-2; Y1-4 = II] II [R1-4 = H, (un)substituted alkyl, (un)substituted aryl, CN; Z = (un)substituted aryl; n = 0, 1]; a tertiary amine derivative (B1,2N)G(NB3,4) formed between the phosphor and the anode [B1-4 = (un)substituted C6-20 aryl; G = (un)substituted arylene]; and a metal complex Q1,2GaL formed between the phosphor and the cathode [Q1,2 = (un)substituted hydrobenzoquinoline derivative; L = halo, (un)substituted (cyclo)alkyl, aryl cong. optional (un)substituted N, OR (R ≡ L)].

IT 198903-36-5 198903-38-7 198903-54-7  
 RL: DEV (Device component use); USES (Uses)  
 (organic electroluminescent device elements)

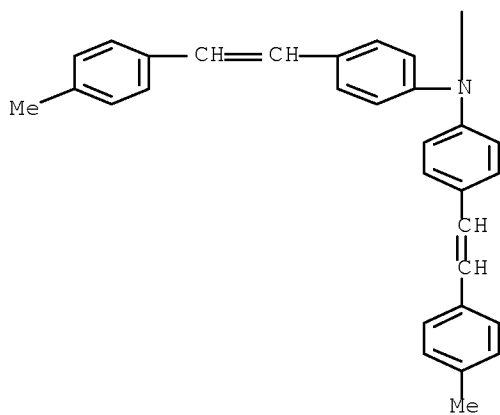
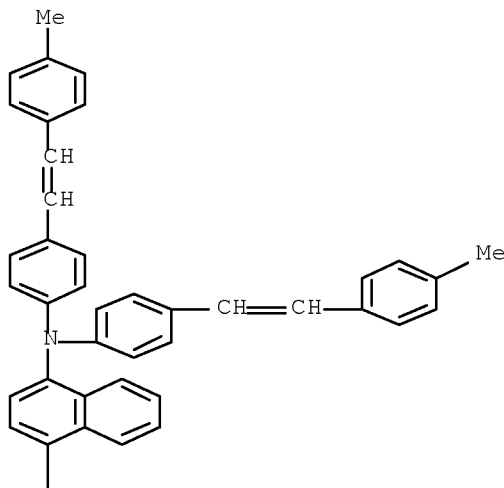
RN 198903-36-5 CAPLUS

CN 1,4-Benzenediamine, N1,N1,N4,N4-tetrakis[4-(2-phenylethenyl)phenyl]- (CA INDEX NAME)



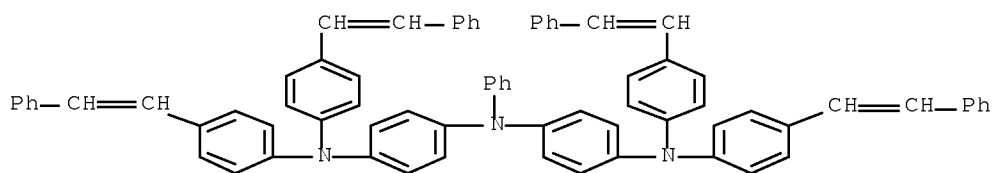
RN 198903-38-7 CAPLUS

CN 1,4-Naphthalenediamine, N1,N1,N4,N4-tetrakis[4-[2-(4-methylphenyl)ethenyl]phenyl]- (CA INDEX NAME)



RN 198903-54-7 CAPLUS

CN 1,4-Benzenediamine, N1-[4-[bis[4-(2-phenylethenyl)phenyl]amino]phenyl]-N1-phenyl-N4,N4-bis[4-(2-phenylethenyl)phenyl]- (CA INDEX NAME)



## (5 CITINGS)

L4 ANSWER 425 OF 440 CAPLUS COPYRIGHT 2010 ACS on STN  
 ACCESSION NUMBER: 1997:618270 CAPLUS Full-text  
 DOCUMENT NUMBER: 127:263592  
 ORIGINAL REFERENCE NO.: 127:51481a,51484a  
 TITLE: Crosslinkable or chain extendable polyarylpolyamines  
 and films for ~~electroluminescent~~ devices  
 INVENTOR(S): Woo, Edmund P.; Inbasekaran, Michael; Shiang, William  
 R.; Roof, Gordon R.; Wu, Weishi  
 PATENT ASSIGNEE(S): Dow Chemical Co., USA  
 SOURCE: PCT Int. Appl., 57 pp.  
 CODEN: PIXXD2  
 DOCUMENT TYPE: Patent  
 LANGUAGE: English  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 9733193	A2	19970912	WO 1997-US2643	19970220
WO 9733193	A3	20020926		
W:	AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GE, HU, IL, IS, JP, KE, KG, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, TJ, TM, TR, TT, UA, UG, UZ, VN, YU			
RW:	KE, LS, MW, SD, SZ, UG, AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, NE, SN, TD, TG			
AU 9722776	A	19970922	AU 1997-22776	19970220
US 5929194	A	19990727	US 1997-967348	19971027
PRIORITY APPLN. INFO.:			US 1996-606180	A 19960223
			US 1996-696280	A 19960813
			WO 1997-US2643	W 19970220

## ASSIGNMENT HISTORY FOR US PATENT AVAILABLE IN LSUS DISPLAY FORMAT

OTHER SOURCE(S): MARPAT 127:263592

AB The polyarylpolyamines are prepared by the reaction of  $\geq 1$  tertiary di- or polyarylamine having 2 halogen substituents with a haloarom. compound having a crosslinkable reactive group or trialkylsiloxo moiety. Films of the title compds., as well as films of polymers of their crosslinkable species, are efficient in the transport of pos. charges when exposed to relatively low voltage levels, and demonstrate solvent and heat resistance.

IT ~~113703-67-6P~~

RL: IMF (Industrial manufacture); PREP (Preparation)  
 (crosslinkable or chain extendable polyarylpolyamines for  
 solvent-resistant films for ~~electroluminescent~~ devices)

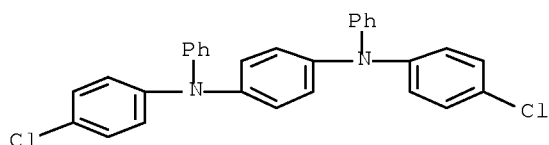
RN 113703-67-6 CAPLUS

CN 1,4-Benzenediamine, N,N'-bis(4-chlorophenyl)-N,N'-diphenyl-, homopolymer  
 (9CI) (CA INDEX NAME)

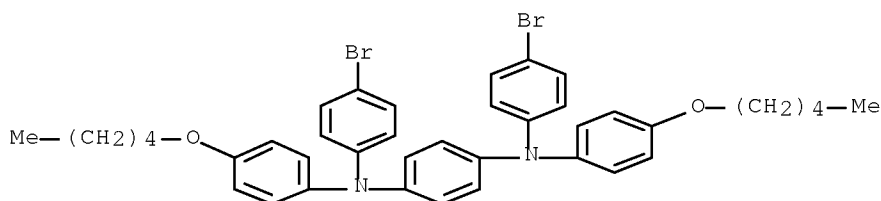
CM 1

CRN 113703-66-5

CMF C30 H22 C12 N2



IT 195730-42-8DP, reaction products with silyl-containing  
benzeneboronic acid  
RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT  
(Reactant or reagent)  
(crosslinkable or chain extendable polyarylpolyamines for  
solvent-resistant films for electroluminescent devices)  
RN 195730-42-8 CAPLUS  
CN 1,4-Benzenediamine, N1,N4-bis(4-bromophenyl)-N1,N4-bis[4-  
(pentyloxy)phenyl]- (CA INDEX NAME)

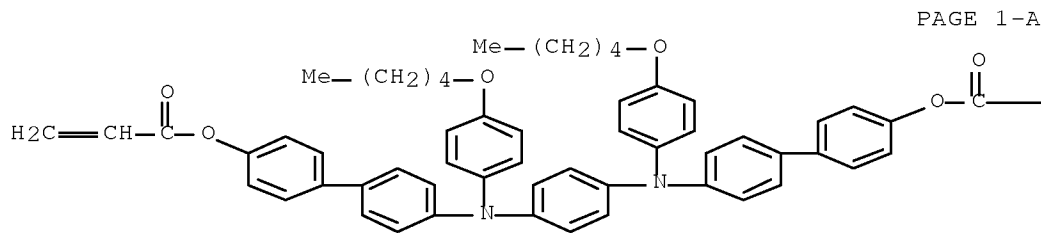


IT 195730-45-1P 195730-55-3P  
RL: IMF (Industrial manufacture); PREP (Preparation)  
(film; crosslinkable or chain extendable polyarylpolyamines for  
solvent-resistant films for electroluminescent devices)  
RN 195730-45-1 CAPLUS  
CN 2-Propenoic acid, 2-ethyl-2-[[[(1-oxo-2-propenyl)oxy]methyl]-1,3-  
propanediyl ester, polymer with 1,4-phenylenebis[[[4-  
(pentyloxy)phenyl]imino][1,1'-biphenyl]-4',4-diyl] di-2-propenoate (9CI)  
(CA INDEX NAME)

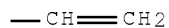
CM 1

CRN 195730-44-0

CMF C58 H56 N2 O6



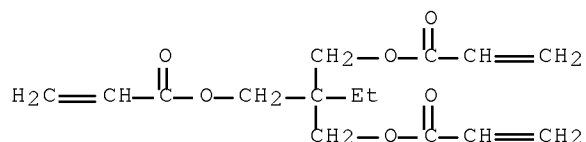
PAGE 1-A



CM 2

CRN 15625-89-5

CMF C15 H20 O6



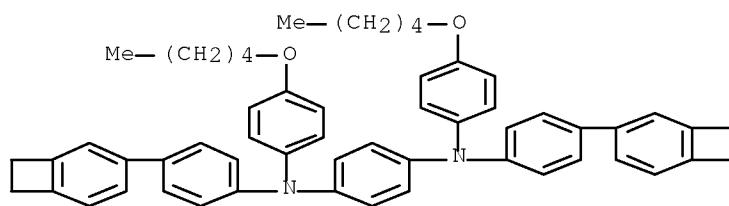
RN 195730-55-3 CAPLUS

CN 1,4-Benzenediamine, N,N'-bis(4-bicyclo[4.2.0]octa-1,3,5-trien-3-ylphenyl)-  
N,N'-bis[4-(pentyloxy)phenyl]-, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 195730-53-1

CMF C56 H56 N2 O2



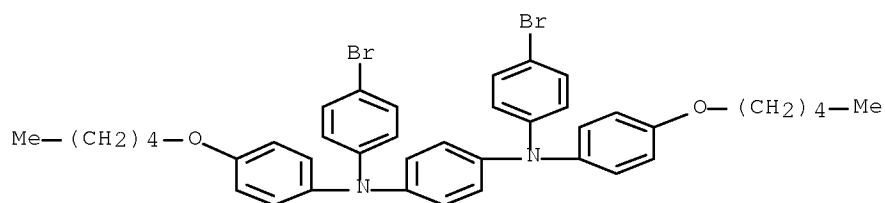
IT 195730-42-8P

RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)

(intermediate; crosslinkable or chain extendable polyarylpolyamines for solvent-resistant films for electroluminescent devices)

RN 195730-42-8 CAPLUS

CN 1,4-Benzenediamine, N1,N4-bis(4-bromophenyl)-N1,N4-bis[4-(  
(pentyloxy)phenyl]- (CA INDEX NAME)



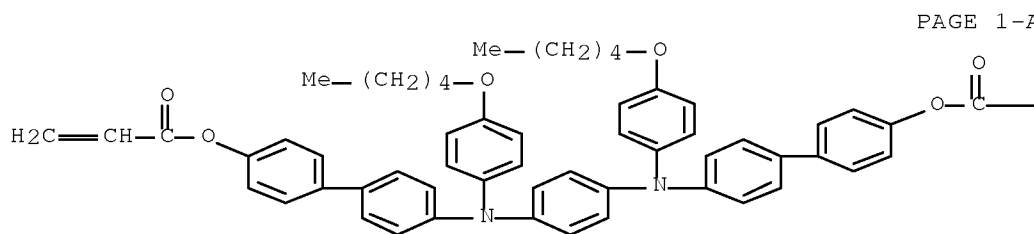
IT 195730-44-0P 195730-53-1P

RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)

(preparation and polymerization; crosslinkable or chain extendable polyarylpolyamines for solvent-resistant films for electroluminescent devices)

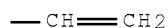
RN 195730-44-0 CAPLUS

CN 2-Propenoic acid, 1,4-phenylenebis[[[(4-pentyloxy)phenyl]imino][1,1'-biphenyl]-4',4-diyl] ester (9CI) (CA INDEX NAME)



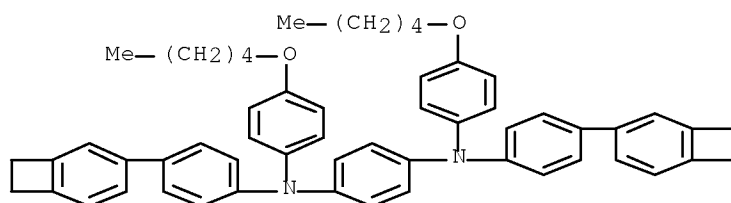
PAGE 1-A

PAGE 1-B



RN 195730-53-1 CAPLUS

CN 1,4-Benzenediamine, N1,N4-bis(4-bicyclo[4.2.0]octa-1,3,5-trien-3-ylphenyl)-N1,N4-bis[4-(pentyloxy)phenyl]- (CA INDEX NAME)



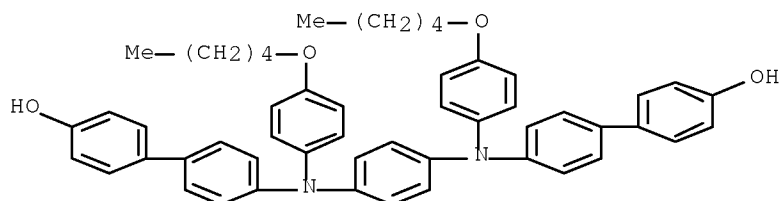
IT 195730-43-9P

RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)

(reaction with acryloyl chloride; crosslinkable or chain extendable polyarylpolyamines for solvent-resistant films for electroluminescent devices)

RN 195730-43-9 CAPLUS

CN [1,1'-Biphenyl]-4-ol, 4',4'''-[1,4-phenylenebis[[4-(pentyloxy)phenyl]imino]]bis- (9CI) (CA INDEX NAME)



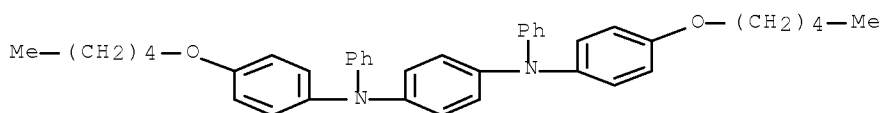
IT 195730-40-6P

RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)

(reaction with bromosuccinimide; crosslinkable or chain extendable polyarylpolyamines for solvent-resistant films for electroluminescent devices)

RN 195730-40-6 CAPLUS

CN 1,4-Benzenediamine, N1,N4-bis[4-(pentyloxy)phenyl]-N1,N4-diphenyl- (CA INDEX NAME)



OS.CITING REF COUNT: 27 THERE ARE 27 CAPLUS RECORDS THAT CITE THIS RECORD (31 CITINGS)  
REFERENCE COUNT: 7 THERE ARE 7 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L4 ANSWER 426 OF 440 CAPLUS COPYRIGHT 2010 ACS on STN

ACCESSION NUMBER: 1997:563439 CAPLUS [Full-text](#)

DOCUMENT NUMBER: 127:191351

ORIGINAL REFERENCE NO.: 127:37119a,37122a

TITLE: Synthesis of polymers for hole and electron transport materials in organic electroluminescent devices

AUTHOR(S): Son, Jhun Mo; Sakaki, Yuichi; Ogino, Kenji; Sato, Hisaya

CORPORATE SOURCE: Faculty of Technology, Tokyo University of Agriculture and Technology, Tokyo, 184, Japan

SOURCE: IEEE Transactions on Electron Devices (1997), 44(8),

1307-1314

CODEN: IETDAI; ISSN: 0018-9383

PUBLISHER: Institute of Electrical and Electronics Engineers

DOCUMENT TYPE: Journal

LANGUAGE: English

AB Styrene-type polymers having tetraphenylbenzidine (TPD) or tetraphenylphenyldiaminobenzene unit (PDA) and a oxadiazole unit on the side chain were prepared as hole and electron transport materials, resp., of an electroluminescent device. The device structures employed were [ITO/hole transport layer/Al] (type I), or [ITO/hole transport layer/electron transport layer/Al] (type II). Type I devices provided c.d. higher than 100 mA/cm<sup>2</sup> but no luminescence was observed. Type II devices emitted luminescence of about 10 cd/m<sup>2</sup> at the c.d. of about 170 mA/cm<sup>2</sup>. The emission maximum of these devices were 460 and 530 nm for the device using TPD and PDA, resp.

IT 194354-35-3P

RL: DEV (Device component use); PRP (Properties); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)

(preparation of styrene derivative polymers for hole and electron transport materials in organic electroluminescent devices)

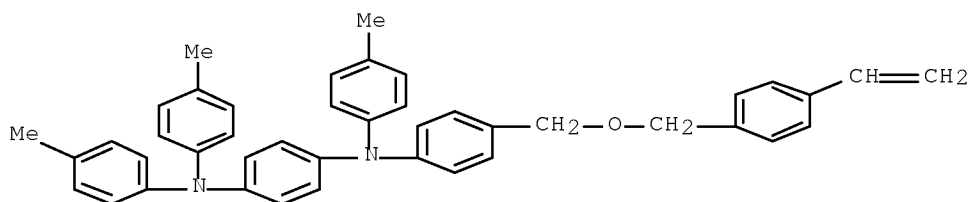
RN 194354-35-3 CAPLUS

CN 1,4-Benzenediamine, N-[4-[(4-ethenylphenyl)methoxy)methyl]phenyl]-N,N',N'-tris(4-methylphenyl)-, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 194354-34-2

CMF C43 H40 N2 O



OS.CITING REF COUNT: 20 THERE ARE 20 CAPLUS RECORDS THAT CITE THIS RECORD (20 CITINGS)

REFERENCE COUNT: 17 THERE ARE 17 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L4 ANSWER 427 OF 440 CAPLUS COPYRIGHT 2010 ACS on STN

ACCESSION NUMBER: 1997:480901 CAPLUS Full-text

DOCUMENT NUMBER: 127:115061

ORIGINAL REFERENCE NO.: 127:22069a,22072a

TITLE: Hole-transporting material and use thereof

INVENTOR(S): Tamano, Michiko; Okutsu, Satoshi; Enokida, Toshio

PATENT ASSIGNEE(S): Toyo Ink Manufacturing Co., Ltd., Japan

SOURCE: Eur. Pat. Appl., 32 pp.

CODEN: EPXXDW

DOCUMENT TYPE: Patent

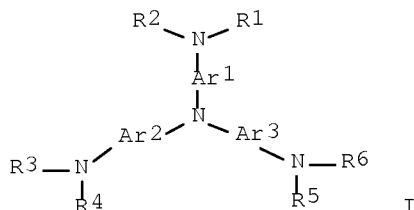
LANGUAGE: English

FAMILY ACC. NUM. COUNT: 2

PATENT INFORMATION:



PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 779765	A2	19970618	EP 1996-309019	19961211
EP 779765	A3	19970730		
EP 779765	B1	20010801		
R: DE, FR, GB				
JP 09222741	A	19970826	JP 1996-306049	19961118
PRIORITY APPLN. INFO.:			JP 1995-321345	A 19951211
			JP 1996-306049	A 19961118
OTHER SOURCE(S):		MARPAT 127:115061		
GI				



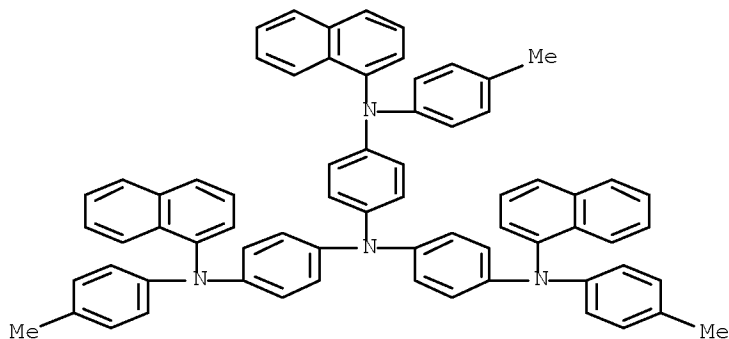
AB Hole-transporting materials comprise triaryl amines described by the general formula I (R1-6 = (un)substituted aryl groups; and Ar1-3 = (un)substituted arylene groups, with the restriction that  $\geq 1$  of R1-6 = comprises fused aromatic rings or is an aryl group having a cycloalkyl ring). Organic electroluminescent devices and electrophotog. photoreceptors employing the materials are also described.

IT 192180-91-9 192180-92-0 192180-93-1  
 192180-96-4 192180-97-5 192181-00-3  
 192181-04-7 192181-17-2 192181-18-3

RL: DEV (Device component use); PRP (Properties); USES (Uses)  
 (aryl amine hole-transporting materials and apparatus using them)

RN 192180-91-9 CAPLUS

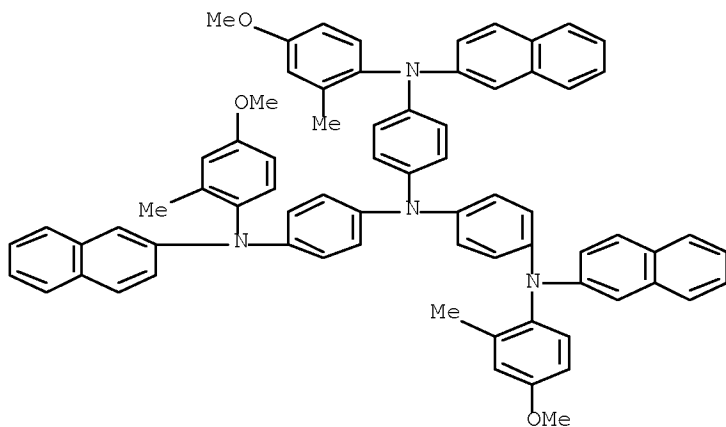
CN 1,4-Benzenediamine, N1-(4-methylphenyl)-N4,N4-bis[4-[(4-methylphenyl)-1-naphthalenylamino]phenyl]-N1-1-naphthalenyl- (CA INDEX NAME)



RN 192180-92-0 CAPLUS

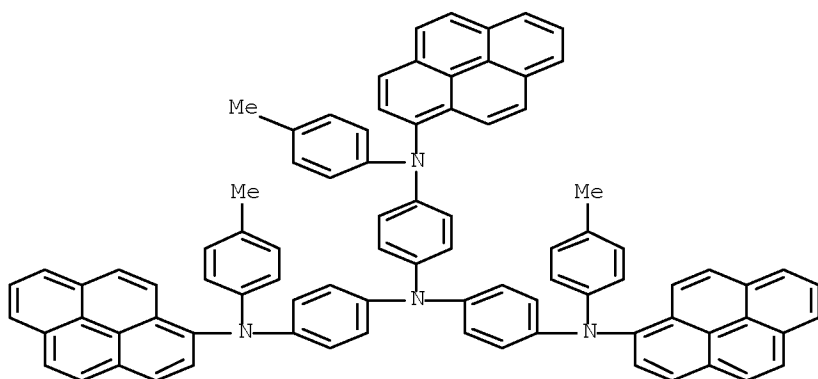
CN 1,4-Benzenediamine, N1-(4-methoxy-2-methylphenyl)-N4,N4-bis[4-[(4-methoxy-2-methylphenyl)-2-naphthalenylamino]phenyl]-N1-2-naphthalenyl- (CA INDEX NAME)

NAME)



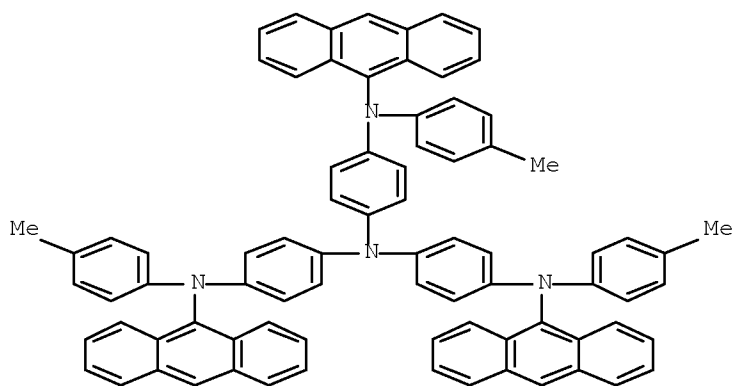
RN 192180-93-1 CAPLUS

CN 1,4-Benzenediamine, N1-(4-methylphenyl)-N4,N4-bis[4-[(4-methylphenyl)-1-pyrenylamino]phenyl]-N1-1-pyrenyl- (CA INDEX NAME)



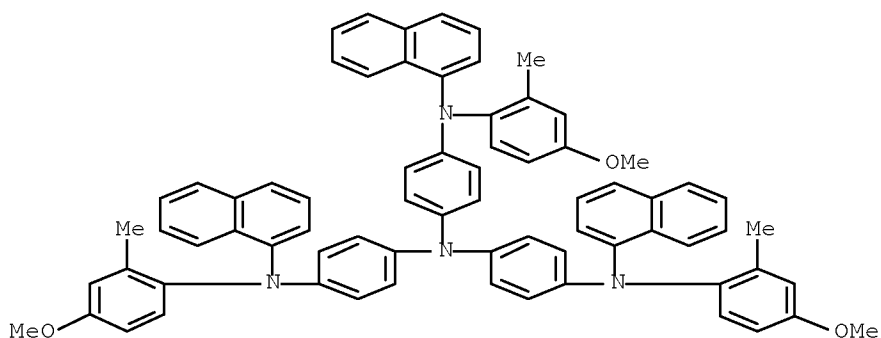
RN 192180-96-4 CAPLUS

CN 1,4-Benzenediamine, N1-9-anthracenyl-N4,N4-bis[4-[9-anthracenyl(4-methylphenyl)amino]phenyl]-N1-(4-methylphenyl)- (CA INDEX NAME)



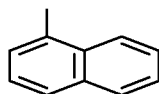
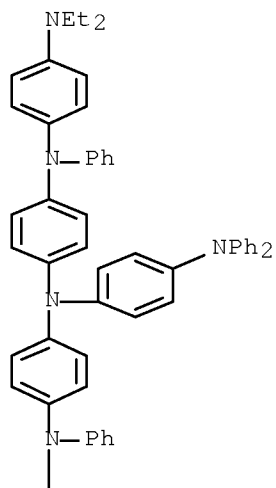
RN 192180-97-5 CAPLUS

CN 1,4-Benzenediamine, N1-(4-methoxy-2-methylphenyl)-N4,N4-bis[4-[(4-methoxy-2-methylphenyl)-1-naphthalenylamino]phenyl]-N1-1-naphthalenyl- (CA INDEX NAME)

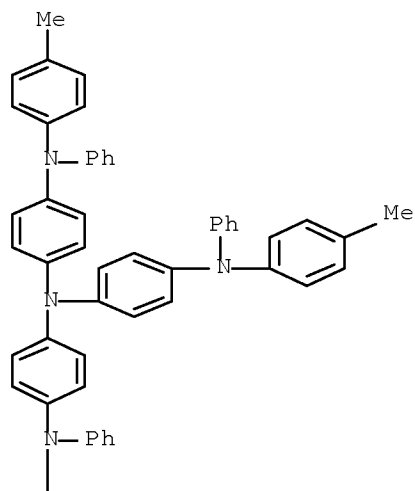


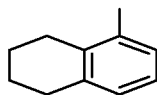
RN 192181-00-3 CAPLUS

CN 1,4-Benzenediamine, N1-[4-(diethylamino)phenyl]-N4-[4-(diphenylamino)phenyl]-N4-[4-(1-naphthalenylphenylamino)phenyl]-N1-phenyl- (CA INDEX NAME)



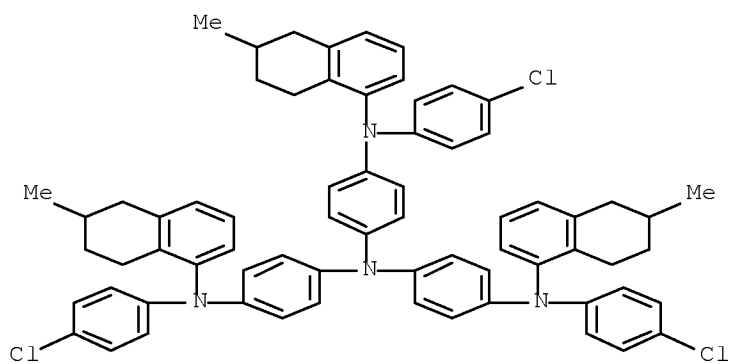
RN 192181-04-7 CAPLUS  
 CN 1,4-Benzenediamine, N1,N1-bis[4-[(4-methylphenyl)phenylamino]phenyl]-N4-phenyl-N4-(5,6,7,8-tetrahydro-1-naphthalenyl)- (CA INDEX NAME)





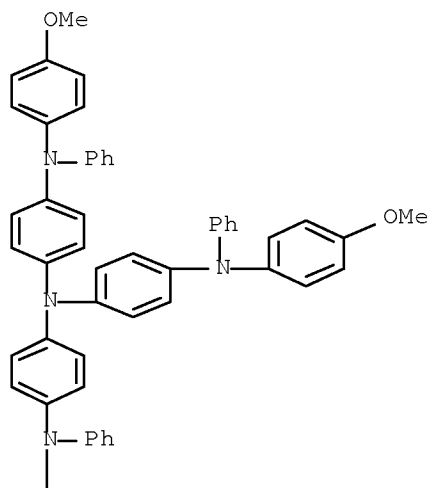
RN 192181-17-2 CAPLUS

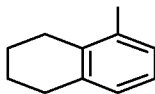
CN 1,4-Benzenediamine, N1-(4-chlorophenyl)-N4,N4-bis[4-[(4-chlorophenyl)(5,6,7,8-tetrahydro-6-methyl-1-naphthalenyl)amino]phenyl]-N1-(5,6,7,8-tetrahydro-6-methyl-1-naphthalenyl)- (CA INDEX NAME)



RN 192181-18-3 CAPLUS

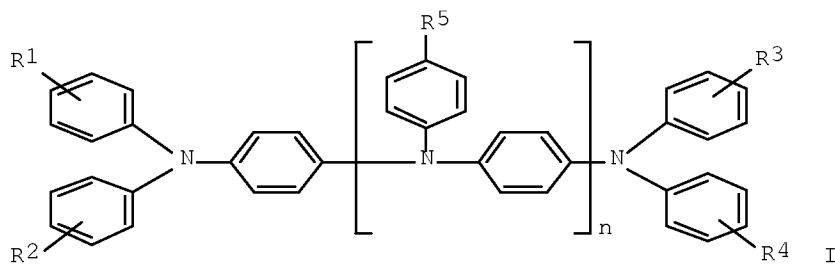
CN 1,4-Benzenediamine, N1,N1-bis[4-[(4-methoxyphenyl)phenylamino]phenyl]-N4-phenyl-N4-(5,6,7,8-tetrahydro-1-naphthalenyl)- (CA INDEX NAME)





L4 ANSWER 428 OF 440 CAPLUS COPYRIGHT 2010 ACS on STN  
 ACCESSION NUMBER: 1997:469997 CAPLUS Full-text  
 DOCUMENT NUMBER: 127:101553  
 ORIGINAL REFERENCE NO.: 127:19443a,19446a  
 TITLE: Organic thin film electroluminescent device elements  
 INVENTOR(S): Ito, Yuichi; Ogino, Kenji; Sato, Hisaya  
 PATENT ASSIGNEE(S): Toppan Printing Co., Ltd., Japan  
 SOURCE: Jpn. Kokai Tokkyo Koho, 12 pp.  
 CODEN: JKXXAF  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Japanese  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 09151371	A	19970610	JP 1995-312576	19951130
PRIORITY APPLN. INFO.: GI			JP 1995-312576	19951130

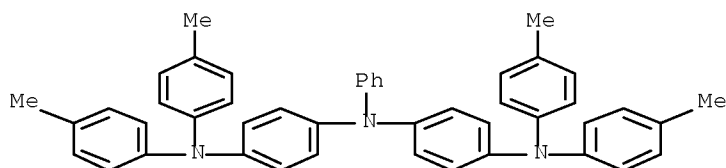


AB The elements comprise a transparent substrate; an ITO electrode; a hole-injection layer containing I (R1-5 = H, Me, methoxy, Ph, trifluoromethyl, OH, hydroxymethyl, formyl, NH2, double bonded group, epoxy ring; n = 1, 2); an Alq3 phosphor; a MgAg electrode; a GeO sealant; and a glass/resin encapsulation.  
 IT 191795-04-7 191795-08-1  
 RL: DEV (Device component use); USES (Uses)

(organic thin film electroluminescent device elements)

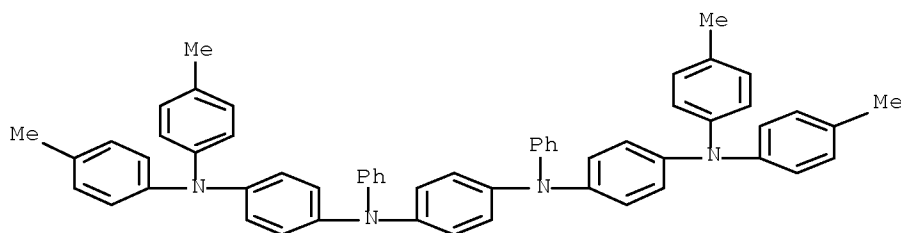
RN 191795-04-7 CAPLUS

CN 1,4-Benzenediamine, N1-[4-[bis(4-methylphenyl)amino]phenyl]-N4,N4-bis(4-methylphenyl)-N1-phenyl- (CA INDEX NAME)



RN 191795-08-1 CAPLUS

CN 1,4-Benzenediamine, N1,N4-bis[4-[bis(4-methylphenyl)amino]phenyl]-N1,N4-diphenyl- (CA INDEX NAME)



OS.CITING REF COUNT: 4 THERE ARE 4 CAPLUS RECORDS THAT CITE THIS RECORD (4 CITINGS)

L4 ANSWER 429 OF 440 CAPLUS COPYRIGHT 2010 ACS on STN

ACCESSION NUMBER: 1996:746286 CAPLUS Full-text

DOCUMENT NUMBER: 126:39392

ORIGINAL REFERENCE NO.: 126:7705a,7708a

TITLE: Organic thin-film electroluminescent device

INVENTOR(S): Ito, Juichi; Sato, Hisaya; Hayashi, Takako

PATENT ASSIGNEE(S): Toppan Printing Co Ltd, Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 10 pp.

CODEN: JKXXAF

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 08259935	A	19961008	JP 1995-65611	19950324
JP 3646339	B2	20050511		

PRIORITY APPLN. INFO.: JP 1995-65611 19950324

GI

\* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT \*

AB An organic thin-film electroluminescent device, suited for use in optical displays, comprises a multilayer structure including an organic light-emitting layer and a hole injection/transport layer containing a compound represented by I ( G1 = CH or N; G2, G3 = H, C1-4 alkyl, alkoxy, dialkylamino, Q1, Q2, Q3, Q4, a group containing ≥1 benzene, naphthalene, anthracene, and perylene rings, benzene or naphthalene rings condensed with the Ph group in I; R = H, C1-4 alkyl, alkoxy, and dialkylamino).

IT 184159-36-2

RL: DEV (Device component use); PEP (Physical, engineering or chemical process); PROC (Process); USES (Uses)

(organic thin-film electroluminescent device)

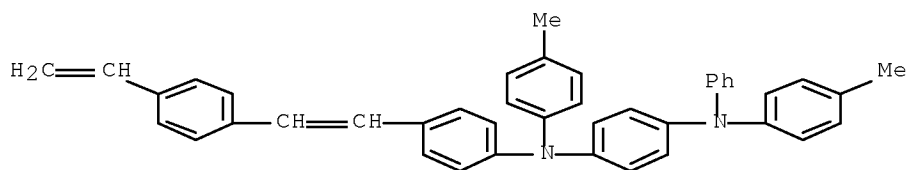
RN 184159-36-2 CAPLUS

CN 1,4-Benzenediamine, N-[4-[2-(4-ethenylphenyl)ethenyl]phenyl]-N,N'-bis(4-methylphenyl)-N'-phenyl-, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 184159-35-1

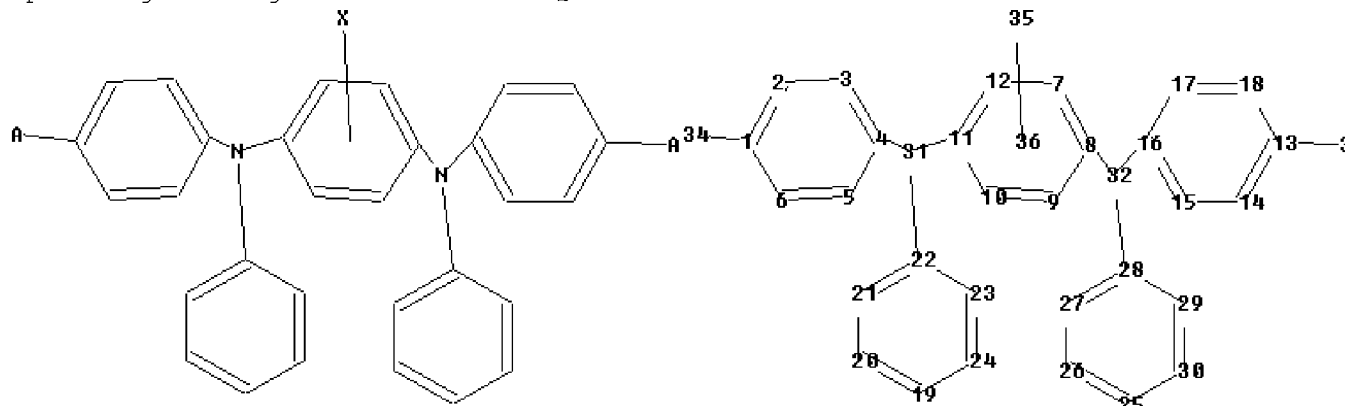
CMF C42 H36 N2



OS.CITING REF COUNT: 1 THERE ARE 1 CAPLUS RECORDS THAT CITE THIS RECORD (1 CITINGS)

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chain nodes :

31 32 33 34 35

ring nodes :

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23  
24 25 26 27 28 29 30



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chain bonds :
1-34  4-31  8-32  11-31  13-33  16-32  22-31  28-32
ring bonds :
1-2  1-6  2-3  3-4  4-5  5-6  7-8  7-12  8-9  9-10  10-11  11-12  13-14  13-18  14-
15
15-16  16-17  17-18  19-20  19-24  20-21  21-22  22-23  23-24  25-26  25-30  26-27
27-28  28-29
29-30
exact/norm bonds :
1-34  4-31  8-32  11-31  13-33  16-32  22-31  28-32
normalized bonds :
1-2  1-6  2-3  3-4  4-5  5-6  7-8  7-12  8-9  9-10  10-11  11-12  13-14  13-18  14-
15
15-16  16-17  17-18  19-20  19-24  20-21  21-22  22-23  23-24  25-26  25-30  26-27
27-28  28-29
29-30

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Match level :
1:Atom  2:Atom  3:Atom  4:Atom  5:Atom  6:Atom  7:Atom  8:Atom  9:Atom  10:Atom
11:Atom 12:Atom 13:Atom 14:Atom 15:Atom 16:Atom 17:Atom 18:Atom 19:Atom
20:Atom 21:Atom
22:Atom 23:Atom 24:Atom 25:Atom 26:Atom 27:Atom 28:Atom 29:Atom 30:Atom
31:CLASS 32:CLASS
33:CLASS 34:CLASS 35:CLASS 36:Atom

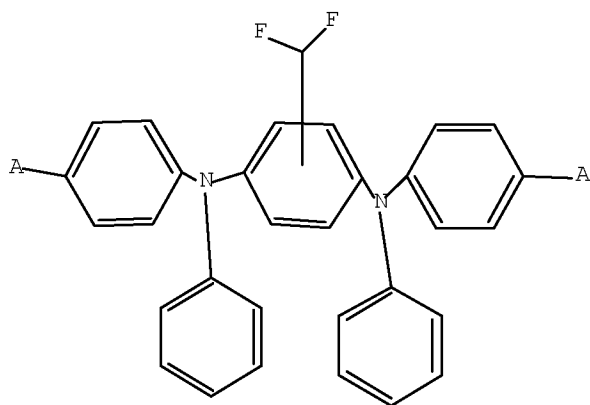
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L1        STRUCTURE UPLOADED

=> d l1

L1 HAS NO ANSWERS

L1                STR



Structure attributes must be viewed using STN Express query preparation.

=> s l1

SAMPLE SEARCH INITIATED 19:12:52 FILE 'REGISTRY'

SAMPLE SCREEN SEARCH COMPLETED -                80 TO ITERATE

100.0% PROCESSED 80 ITERATIONS 0 ANSWERS  
SEARCH TIME: 00.00.01

FULL FILE PROJECTIONS: ONLINE \*\*COMPLETE\*\*  
BATCH \*\*COMPLETE\*\*  
PROJECTED ITERATIONS: 1064 TO 2136  
PROJECTED ANSWERS: 0 TO 0

L2 0 SEA SSS SAM L1

=> s l1 full  
FULL SEARCH INITIATED 19:13:02 FILE 'REGISTRY'  
FULL SCREEN SEARCH COMPLETED - 1629 TO ITERATE

100.0% PROCESSED 1629 ITERATIONS 5 ANSWERS  
SEARCH TIME: 00.00.01

L3 5 SEA SSS FUL L1

This file contains CAS Registry Numbers for easy and accurate  
substance identification.

=> s l3  
L4 3 L3  
  
=> d ibib abs hitstr 1-3

L4 ANSWER 1 OF 3 CAPLUS COPYRIGHT 2010 ACS on STN  
ACCESSION NUMBER: 2005:540610 CAPLUS Full-text  
DOCUMENT NUMBER: 143:78969  
TITLE: Nitrogen-containing oligomers and polymers for optical  
applications  
PATENT ASSIGNEE(S): Covion Organic Semiconductors G.m.b.H., Germany  
SOURCE: PCT Int. Appl., 33 pp.  
CODEN: PIXXD2  
DOCUMENT TYPE: Patent  
LANGUAGE: English  
FAMILY ACC. NUM. COUNT: 1  
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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WO 2005056638	A1	20050623	WO 2004-EP14152	20041213
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW				
RW: BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
EP 1694744	A1	20060830	EP 2004-803789	20041213
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, FI, RO, CY, TR, BG, CZ, EE, HU, PL, SK, IS				
CN 1906229	A	20070131	CN 2004-80040408	20041213
CN 100558791	C	20091111		
JP 2007518842	T	20070712	JP 2006-543506	20041213

KR 2007012324	A	20070125	KR 2006-711672	20060613
US 20080217605	A1	20080911	US 2007-582459	20070516
PRIORITY APPLN. INFO.:			EP 2003-28789	A 20031213
			WO 2004-EP14152	W 20041213

ASSIGNMENT HISTORY FOR US PATENT AVAILABLE IN LSUS DISPLAY FORMAT

OTHER SOURCE(S): MARPAT 143:78969

AB An optionally substituted oligomer or polymer comprises Ar1A(Ar3)[Ar2A(Ar3)]nAr1; wherein each A is a nitrogen atom or optionally substituted phosphorus atom; each Ar1 and Ar3 is the same or different and independently represents an optionally substituted aryl or heteroaryl; n is at least 1; Ar2 represents an optionally substituted aryl or heteroaryl comprising a linking ring to which the two nitrogen atoms are both directly linked; and at least one of Ar2 and either or both of Ar1 is substituted with at least one substituent. The polymers are useful in optical applications.

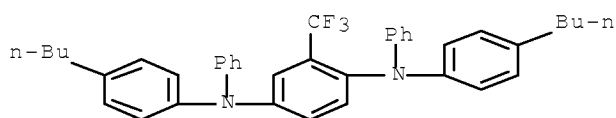
IT 854922-37-5P 854922-39-7P 854922-41-1P

RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)

(nitrogen-containing oligomers and polymers for optical applications)

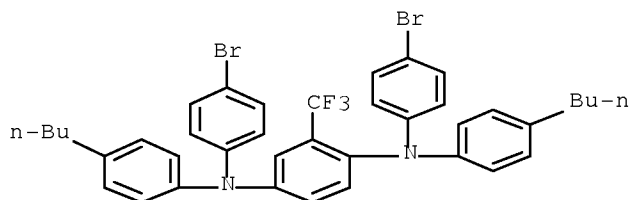
RN 854922-37-5 CAPLUS

CN 1,4-Benzenediamine, N1,N4-bis(4-butylphenyl)-N1,N4-diphenyl-2-(trifluoromethyl)- (CA INDEX NAME)



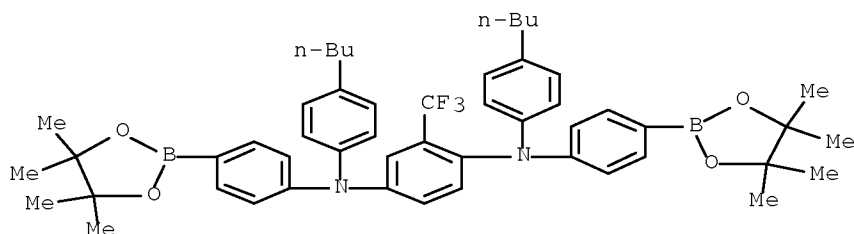
RN 854922-39-7 CAPLUS

CN 1,4-Benzenediamine, N1,N4-bis(4-bromophenyl)-N1,N4-bis(4-butylphenyl)-2-(trifluoromethyl)- (CA INDEX NAME)



RN 854922-41-1 CAPLUS

CN 1,4-Benzenediamine, N1,N4-bis(4-butylphenyl)-N1,N4-bis[4-(4,4,5,5-tetramethyl-1,3,2-dioxaborolan-2-yl)phenyl]-2-(trifluoromethyl)- (CA INDEX NAME)



OS.CITING REF COUNT: 2 THERE ARE 2 CAPLUS RECORDS THAT CITE THIS RECORD  
(2 CITINGS)  
REFERENCE COUNT: 7 THERE ARE 7 CITED REFERENCES AVAILABLE FOR THIS  
RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L4 ANSWER 2 OF 3 CAPLUS COPYRIGHT 2010 ACS on STN

ACCESSION NUMBER: 2005:35085 CAPLUS Full-text

DOCUMENT NUMBER: 142:102910

TITLE: Organic electroluminescent device, illuminating  
device, and display

INVENTOR(S): Oshiyama, Tomohiro; Kita, Hiroshi; Katoh, Eisaku

PATENT ASSIGNEE(S): Konica Minolta Holding, Inc., Japan

SOURCE: PCT Int. Appl., 80 pp.

CODEN: PIXXD2

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2005004549	A1	20050113	WO 2004-JP9391	20040625
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW				
RW: BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
EP 1651013	A1	20060426	EP 2004-746860	20040625
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, PL, SK, HR				
CN 1817066	A	20060809	CN 2004-80019019	20040625
CN 100556224	C	20091028		
US 20070099025	A1	20070503	US 2005-562652	20051227
US 7371469	B2	20080513		
US 20080233431	A1	20080925	US 2008-82251	20080410
PRIORITY APPLN. INFO.:			JP 2003-193519	A 20030708
			WO 2004-JP9391	W 20040625
			US 2005-562652	A3 20051227

ASSIGNMENT HISTORY FOR US PATENT AVAILABLE IN LSUS DISPLAY FORMAT

AB An organic electroluminescent device comprising at least a light-emitting layer containing a phosphorescent compound between an anode and a cathode is

characterized by comprising an adjoining layer so arranged between the light-emitting layer and the cathode as to be adjacent to the light-emitting layer and containing a compound with an electron-withdrawing group having an HOMO at -5.7 eV to -7.0 eV and an LUMO at -1.3 eV to -2.3 eV.

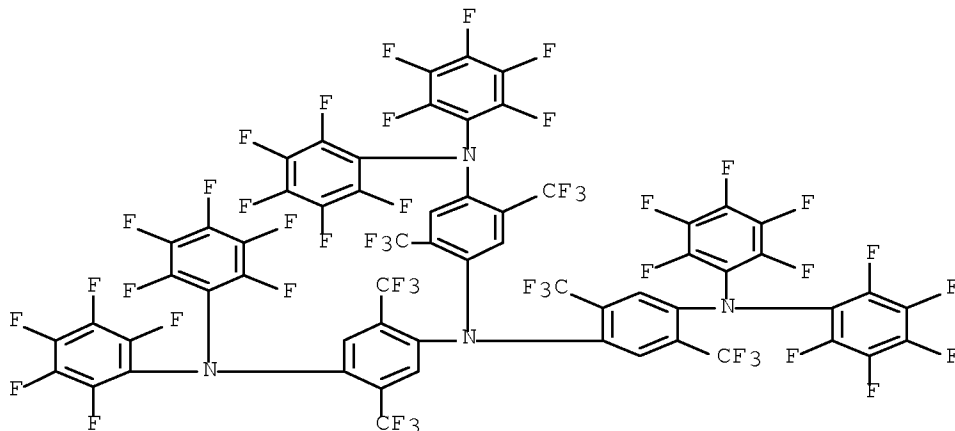
IT 817638-42-9

RL: DEV (Device component use); USES (Uses)

(organic electroluminescent device, illumination apparatus and display)

RN 817638-42-9 CAPLUS

CN 1,4-Benzenediamine, N1,N1-bis[4-[bis(2,3,4,5,6-pentafluorophenyl)amino]-2,5-bis(trifluoromethyl)phenyl]-N4,N4-bis(2,3,4,5,6-pentafluorophenyl)-2,5-bis(trifluoromethyl)- (CA INDEX NAME)



OS.CITING REF COUNT: 1 THERE ARE 1 CAPLUS RECORDS THAT CITE THIS RECORD  
(1 CITINGS)  
REFERENCE COUNT: 6 THERE ARE 6 CITED REFERENCES AVAILABLE FOR THIS  
RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L4 ANSWER 3 OF 3 CAPLUS COPYRIGHT 2010 ACS on STN

ACCESSION NUMBER: 2004:118662 CAPLUS Full-text

DOCUMENT NUMBER: 140:172301

TITLE: Organic electroluminescent elements with improved  
brightness and durability and color displays using  
them

INVENTOR(S): Ueda, Noriko; Yamada, Taketoshi; Kita, Hiroshi

PATENT ASSIGNEE(S): Konica Minolta Holdings Inc., Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 57 pp.

CODEN: JKXXAF

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2004047443	A	20040212	JP 2003-134267	20030513
PRIORITY APPLN. INFO.:			JP 2002-140103	A 20020515

OTHER SOURCE(S): MARPAT 140:172301

AB The elements contain , R1R2R3N [R1-3 = substituted p-A-Ph; A = (un)substituted aromatic hydrocarbyl], preferably in hole-transport layers. The elements may have light-emitting layers containing phosphorescent complexes of Group VIII

metals (Os, Ir, or Pt, preferably) and  $\geq 1$  fluorescent compds. having maximum fluorescence wavelength longer than maximum emission wavelength of the complexes.

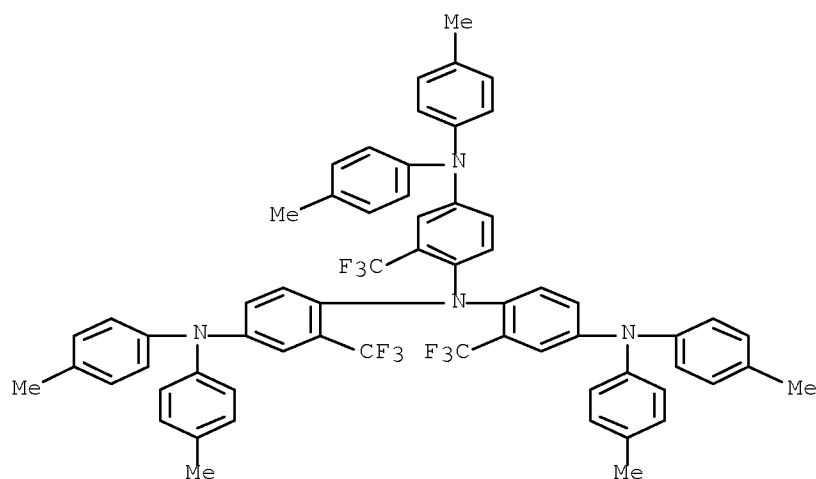
IT 655240-61-2

RL: DEV (Device component use); TEM (Technical or engineered material use); USES (Uses)

(light-emitting layer; organic EL elements containing triphenylamine-based compds. with improved brightness and durability for displays)

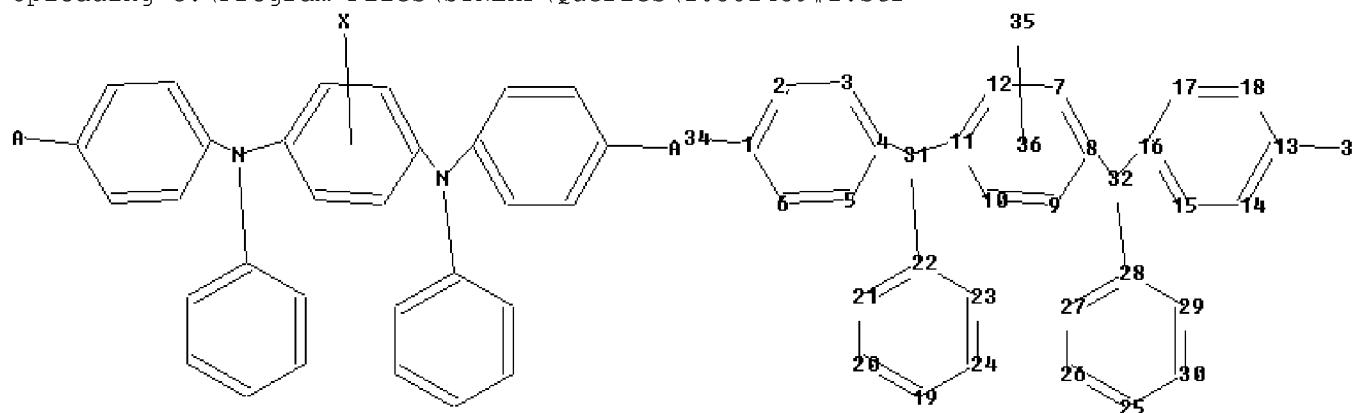
RN 655240-61-2 CAPLUS

CN 1,4-Benzenediamine, N1,N1-bis[4-[bis(4-methylphenyl)amino]-2-(trifluoromethyl)phenyl]-N4,N4-bis(4-methylphenyl)-2-(trifluoromethyl)-  
(CA INDEX NAME)



=>

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31 32 33 34 35

ring nodes :

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23  
24 25 26 27 28 29 30

chain bonds :

1-34 4-31 8-32 11-31 13-33 16-32 22-31 28-32

ring bonds :

```

1-2  1-6  2-3  3-4  4-5  5-6  7-8  7-12  8-9  9-10  10-11  11-12  13-14  13-18  14-
15
15-16  16-17  17-18  19-20  19-24  20-21  21-22  22-23  23-24  25-26  25-30  26-27
27-28  28-29
29-30
exact/norm bonds :
1-34  4-31  8-32  11-31  13-33  16-32  22-31  28-32
normalized bonds :
1-2  1-6  2-3  3-4  4-5  5-6  7-8  7-12  8-9  9-10  10-11  11-12  13-14  13-18  14-
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27-28  28-29
29-30

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Match level :
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11:Atom 12:Atom 13:Atom 14:Atom 15:Atom 16:Atom 17:Atom 18:Atom 19:Atom
20:Atom 21:Atom
22:Atom 23:Atom 24:Atom 25:Atom 26:Atom 27:Atom 28:Atom 29:Atom 30:Atom
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33:CLASS 34:CLASS 35:CLASS 36:Atom

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L5           STRUCTURE UPLOADED

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SAMPLE SEARCH INITIATED 19:16:16 FILE 'REGISTRY'
SAMPLE SCREEN SEARCH COMPLETED -           27 TO ITERATE

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100.0% PROCESSED           27 ITERATIONS                   0 ANSWERS
SEARCH TIME: 00.00.01

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FULL FILE PROJECTIONS:  ONLINE  **COMPLETE**
                          BATCH   **COMPLETE**
PROJECTED ITERATIONS:           229 TO           851
PROJECTED ANSWERS:               0 TO           0

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L6           0 SEA SSS SAM L5

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=> s 15 full
FULL SEARCH INITIATED 19:16:24 FILE 'REGISTRY'
FULL SCREEN SEARCH COMPLETED -           497 TO ITERATE

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100.0% PROCESSED           497 ITERATIONS                   0 ANSWERS
SEARCH TIME: 00.00.01

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L7           0 SEA SSS FUL L5

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chain nodes :
31 32 33 34 35
ring nodes :
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23
24 25 26 27 28 29 30
chain bonds :
1-34 4-31 8-32 11-31 13-33 16-32 22-31 28-32
ring bonds :
1-2 1-6 2-3 3-4 4-5 5-6 7-8 7-12 8-9 9-10 10-11 11-12 13-14 13-18 14-15
15-16 16-17 17-18 19-20 19-24 20-21 21-22 22-23 23-24 25-26 25-30 26-27
27-28 28-29
29-30
exact/norm bonds :
1-34 4-31 8-32 11-31 13-33 16-32 22-31 28-32
normalized bonds :
1-2 1-6 2-3 3-4 4-5 5-6 7-8 7-12 8-9 9-10 10-11 11-12 13-14 13-18 14-15
15-16 16-17 17-18 19-20 19-24 20-21 21-22 22-23 23-24 25-26 25-30 26-27
27-28 28-29
29-30

Match level :
1:Atom 2:Atom 3:Atom 4:Atom 5:Atom 6:Atom 7:Atom 8:Atom 9:Atom 10:Atom
11:Atom 12:Atom 13:Atom 14:Atom 15:Atom 16:Atom 17:Atom 18:Atom 19:Atom
20:Atom 21:Atom
22:Atom 23:Atom 24:Atom 25:Atom 26:Atom 27:Atom 28:Atom 29:Atom 30:Atom
31:CLASS 32:CLASS
33:CLASS 34:CLASS 35:CLASS 36:Atom

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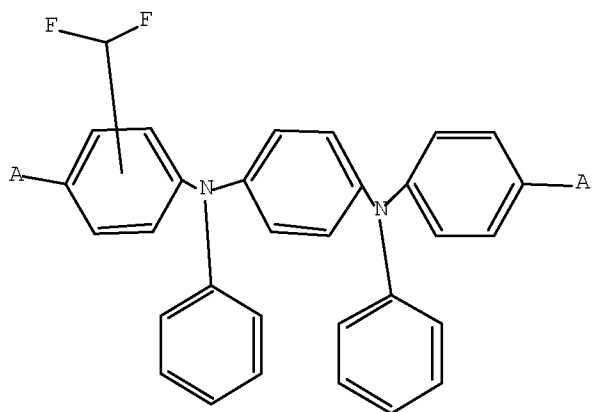
L8            STRUCTURE    UPLOADED

$$\Rightarrow d \mid 18$$

L8 HAS NO ANSWERS

L8 STR





Structure attributes must be viewed using STN Express query preparation.

=> s 18

SAMPLE SEARCH INITIATED 19:18:22 FILE 'REGISTRY'

SAMPLE SCREEN SEARCH COMPLETED - 80 TO ITERATE

100.0% PROCESSED 80 ITERATIONS

0 ANSWERS

SEARCH TIME: 00.00.01

FULL FILE PROJECTIONS: ONLINE \*\*COMPLETE\*\*

BATCH \*\*COMPLETE\*\*

PROJECTED ITERATIONS: 1064 TO 2136

PROJECTED ANSWERS: 0 TO 0

L9 0 SEA SSS SAM L8

=> s 18 full

FULL SEARCH INITIATED 19:18:28 FILE 'REGISTRY'

FULL SCREEN SEARCH COMPLETED - 1629 TO ITERATE

100.0% PROCESSED 1629 ITERATIONS

2 ANSWERS

SEARCH TIME: 00.00.01

L10 2 SEA SSS FUL L8

This file contains CAS Registry Numbers for easy and accurate substance identification.

=> s 110

L11 2 L10

=> d ibib abs hitstr 1-2

L11 ANSWER 1 OF 2 CAPLUS COPYRIGHT 2010 ACS on STN

ACCESSION NUMBER: 2005:35085 CAPLUS Full-text

DOCUMENT NUMBER: 142:102910

TITLE: Organic electroluminescent device, illuminating device, and display

INVENTOR(S): Oshiyama, Tomohiro; Kita, Hiroshi; Katoh, Eisaku

PATENT ASSIGNEE(S): Konica Minolta Holding, Inc., Japan  
 SOURCE: PCT Int. Appl., 80 pp.  
 CODEN: PIXXD2  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Japanese  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2005004549	A1	20050113	WO 2004-JP9391	20040625
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW RW: BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
EP 1651013	A1	20060426	EP 2004-746860	20040625
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, PL, SK, HR				
CN 1817066	A	20060809	CN 2004-80019019	20040625
CN 100556224	C	20091028		
US 20070099025	A1	20070503	US 2005-562652	20051227
US 7371469	B2	20080513		
US 20080233431	A1	20080925	US 2008-82251	20080410
PRIORITY APPLN. INFO.:			JP 2003-193519	A 20030708
			WO 2004-JP9391	W 20040625
			US 2005-562652	A3 20051227

ASSIGNMENT HISTORY FOR US PATENT AVAILABLE IN LSUS DISPLAY FORMAT

AB An organic electroluminescent device comprising at least a light-emitting layer containing a phosphorescent compound between an anode and a cathode is characterized by comprising an adjoining layer so arranged between the light-emitting layer and the cathode as to be adjacent to the light-emitting layer and containing a compound with an electron-withdrawing group having an HOMO at -5.7 eV to -7.0 eV and an LUMO at -1.3 eV to -2.3 eV.

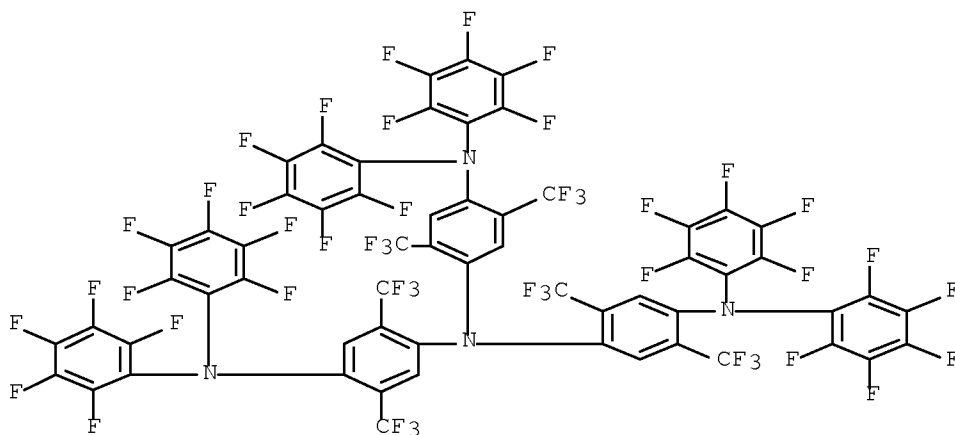
IT ~~817638-42-9~~

RL: DEV (Device component use); USES (Uses)

(organic electroluminescent device, illumination apparatus and display)

RN 817638-42-9 CAPLUS

CN 1,4-Benzenediamine, N1,N1-bis[4-[bis(2,3,4,5,6-pentafluorophenyl)amino]-2,5-bis(trifluoromethyl)phenyl]-N4,N4-bis(2,3,4,5,6-pentafluorophenyl)-2,5-bis(trifluoromethyl)- (CA INDEX NAME)



OS.CITING REF COUNT: 1 THERE ARE 1 CAPLUS RECORDS THAT CITE THIS RECORD  
(1 CITINGS)  
REFERENCE COUNT: 6 THERE ARE 6 CITED REFERENCES AVAILABLE FOR THIS  
RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L11 ANSWER 2 OF 2 CAPLUS COPYRIGHT 2010 ACS on STN  
ACCESSION NUMBER: 2004:118662 CAPLUS Full-text  
DOCUMENT NUMBER: 140:172301  
TITLE: Organic electroluminescent elements with improved  
brightness and durability and color displays using  
them  
INVENTOR(S): Ueda, Noriko; Yamada, Taketoshi; Kita, Hiroshi  
PATENT ASSIGNEE(S): Konica Minolta Holdings Inc., Japan  
SOURCE: Jpn. Kokai Tokkyo Koho, 57 pp.  
CODEN: JKXXAF  
DOCUMENT TYPE: Patent  
LANGUAGE: Japanese  
FAMILY ACC. NUM. COUNT: 1  
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2004047443	A	20040212	JP 2003-134267	20030513
PRIORITY APPLN. INFO.:			JP 2002-140103	A 20020515
OTHER SOURCE(S):	MARPAT 140:172301			

AB The elements contain , R1R2R3N [R1-3 = substituted p-A-Ph; A = (un)substituted aromatic hydrocarbyl], preferably in hole-transport layers. The elements may have light-emitting layers containing phosphorescent complexes of Group VIII metals (Os, Ir, or Pt, preferably) and ≥1 fluorescent compds. having maximum fluorescence wavelength longer than maximum emission wavelength of the complexes.

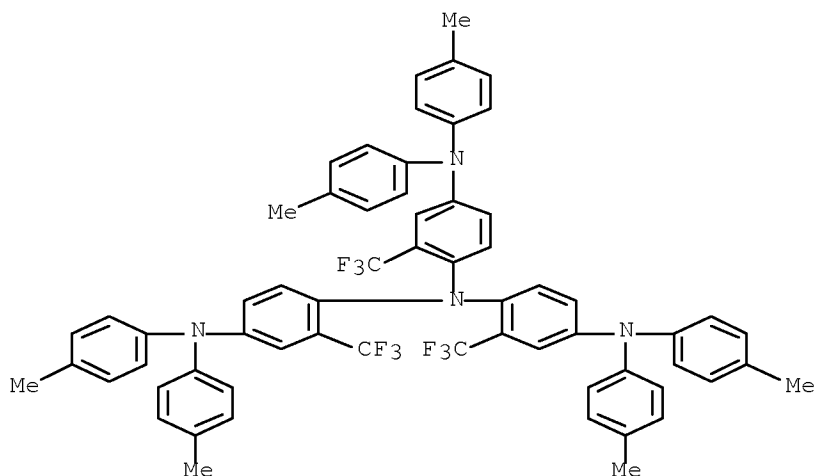
IT 655240-61-2

RL: DEV (Device component use); TEM (Technical or engineered material use); USES (Uses)

(light-emitting layer; organic EL elements containing triphenylamine-based compds. with improved brightness and durability for displays)

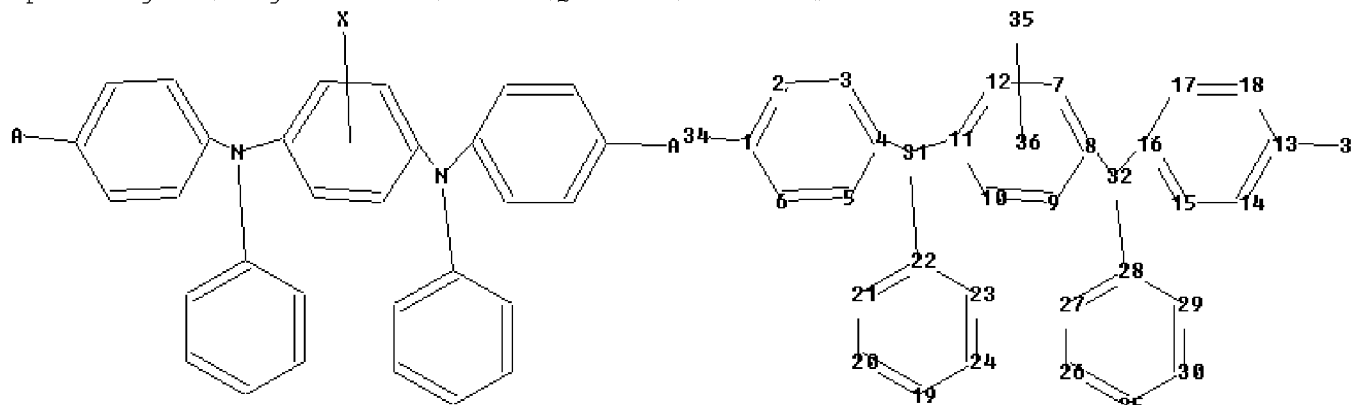
RN 655240-61-2 CAPLUS

CN 1,4-Benzenediamine, N1,N1-bis[4-[bis(4-methylphenyl)amino]-2-(trifluoromethyl)phenyl]-N4,N4-bis(4-methylphenyl)-2-(trifluoromethyl)-  
(CA INDEX NAME)



=>

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chain nodes :

31 32 33 34 35

ring nodes :

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23

24 25 26 27 28 29 30

chain bonds :

1-34 4-31 8-32 11-31 13-33 16-32 22-31 28-32

ring bonds :

1-2 1-6 2-3 3-4 4-5 5-6 7-8 7-12 8-9 9-10 10-11 11-12 13-14 13-18 14-15

15-16 16-17 17-18 19-20 19-24 20-21 21-22 22-23 23-24 25-26 25-30 26-27

27-28 28-29

29-30

exact/norm bonds :

1-34 4-31 8-32 11-31 13-33 16-32 22-31 28-32

normalized bonds :

1-2 1-6 2-3 3-4 4-5 5-6 7-8 7-12 8-9 9-10 10-11 11-12 13-14 13-18 14-15

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27-28 28-29

29-30

Match level :

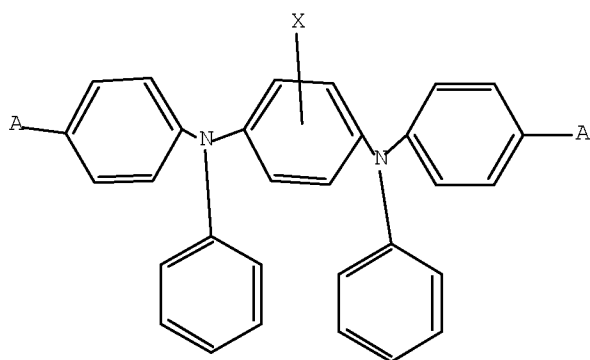
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11:Atom 12:Atom 13:Atom 14:Atom 15:Atom 16:Atom 17:Atom 18:Atom 19:Atom  
20:Atom 21:Atom  
22:Atom 23:Atom 24:Atom 25:Atom 26:Atom 27:Atom 28:Atom 29:Atom 30:Atom  
31:CLASS 32:CLASS  
33:CLASS 34:CLASS 35:CLASS 36:Atom

L12 STRUCTURE UPLOADED

=> d l12

L12 HAS NO ANSWERS

L12 STR



Structure attributes must be viewed using STN Express query preparation.

=> s l12

SAMPLE SEARCH INITIATED 19:25:16 FILE 'REGISTRY'

SAMPLE SCREEN SEARCH COMPLETED - 510 TO ITERATE

100.0% PROCESSED 510 ITERATIONS

0 ANSWERS

SEARCH TIME: 00.00.01

FULL FILE PROJECTIONS: ONLINE \*\*COMPLETE\*\*

BATCH \*\*COMPLETE\*\*

PROJECTED ITERATIONS: 8846 TO 11554

PROJECTED ANSWERS: 0 TO 0

L13 0 SEA SSS SAM L12

=> s l12 full

FULL SEARCH INITIATED 19:25:22 FILE 'REGISTRY'

FULL SCREEN SEARCH COMPLETED - 9982 TO ITERATE

100.0% PROCESSED 9982 ITERATIONS

23 ANSWERS

SEARCH TIME: 00.00.01

This file contains CAS Registry Numbers for easy and accurate substance identification.

=> s l14

L15 9 L14

=> d ibib abs hitstr 1-9

L15 ANSWER 1 OF 9 CAPLUS COPYRIGHT 2010 ACS on STN

ACCESSION NUMBER: 2005:540610 CAPLUS Full-text

DOCUMENT NUMBER: 143:78969

TITLE: Nitrogen-containing oligomers and polymers for optical applications

PATENT ASSIGNEE(S): Covion Organic Semiconductors G.m.b.H., Germany

SOURCE: PCT Int. Appl., 33 pp.

CODEN: PIXXD2

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2005056638	A1	20050623	WO 2004-EP14152	20041213
W:	AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW			
RW:	BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG			
EP 1694744	A1	20060830	EP 2004-803789	20041213
R:	AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, FI, RO, CY, TR, BG, CZ, EE, HU, PL, SK, IS			
CN 1906229	A	20070131	CN 2004-80040408	20041213
CN 100558791	C	20091111		
JP 2007518842	T	20070712	JP 2006-543506	20041213
KR 2007012324	A	20070125	KR 2006-711672	20060613
US 20080217605	A1	20080911	US 2007-582459	20070516
PRIORITY APPLN. INFO.:			EP 2003-28789	A 20031213
			WO 2004-EP14152	W 20041213

ASSIGNMENT HISTORY FOR US PATENT AVAILABLE IN LSUS DISPLAY FORMAT

OTHER SOURCE(S): MARPAT 143:78969

AB An optionally substituted oligomer or polymer comprises Ar1A(Ar3)[Ar2A(Ar3)]nAr1; wherein each A is a nitrogen atom or optionally substituted phosphorus atom; each Ar1 and Ar3 is the same or different and independently represents an optionally substituted aryl or heteroaryl; n is at least 1; Ar2 represents an optionally substituted aryl or heteroaryl comprising a linking ring to which the two nitrogen atoms are both directly linked; and at least one of Ar2 and either or both of Ar1 is substituted with at least one substituent. The polymers are useful in optical applications.

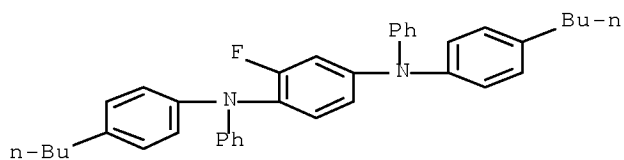
IT 854922-33-1P 854922-35-3P 854922-42-2P  
854922-44-4P

RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)

(nitrogen-containing oligomers and polymers for optical applications)

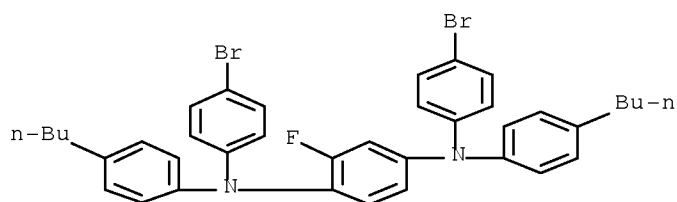
RN 854922-33-1 CAPLUS

CN 1,4-Benzenediamine, N1,N4-bis(4-butylphenyl)-2-fluoro-N1,N4-diphenyl- (CA INDEX NAME)



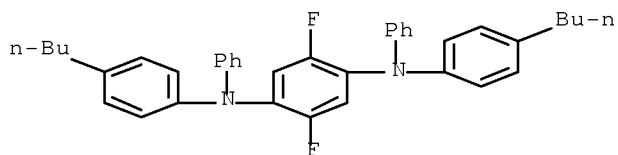
RN 854922-35-3 CAPLUS

CN 1,4-Benzenediamine, N1,N4-bis(4-bromophenyl)-N1,N4-bis(4-butylphenyl)-2-fluoro- (CA INDEX NAME)



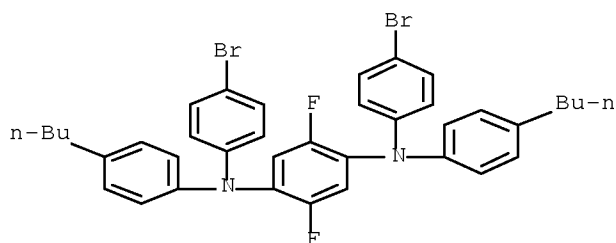
RN 854922-42-2 CAPLUS

CN 1,4-Benzenediamine, N1,N4-bis(4-butylphenyl)-2,5-difluoro-N1,N4-diphenyl- (CA INDEX NAME)

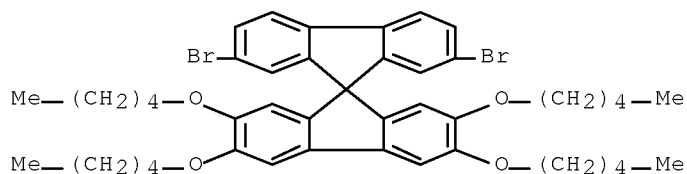


RN 854922-44-4 CAPLUS

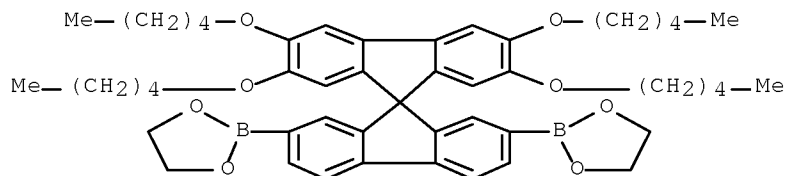
CN 1,4-Benzenediamine, N1,N4-bis(4-bromophenyl)-N1,N4-bis(4-butylphenyl)-2,5-difluoro- (CA INDEX NAME)



IT 854922-59-1P 854922-61-5P  
 RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
 (nitrogen-containing oligomers and polymers for optical applications)  
 RN 854922-59-1 CAPLUS  
 CN 1,4-Benzenediamine, N,N'-bis(4-bromophenyl)-N,N'-bis(4-butylphenyl)-2-fluoro-, polymer with N,N-bis(4-bromophenyl)-4-(1-methylpropyl)benzenamine, 2',7'-dibromo-2,3,6,7-tetrakis(pentyloxy)-9,9'-spirobi[9H-fluorene] and 2,2'-[2',3',6',7'-tetrakis(pentyloxy)-9,9'-spirobi[9H-fluorene]-2,7-diyl]bis[1,3,2-dioxaborolane] (9CI) (CA INDEX NAME)  
 CM 1  
 CRN 854922-57-9  
 CMF C45 H54 Br2 O4



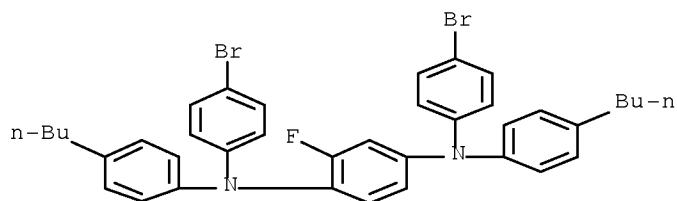
CM 2  
 CRN 854922-56-8  
 CMF C49 H62 B2 O8



CM 3

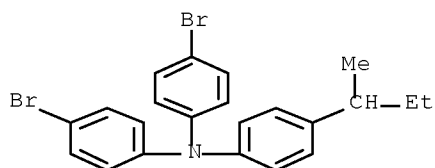


CRN 854922-35-3  
 CMF C38 H37 Br2 F N2



CM 4

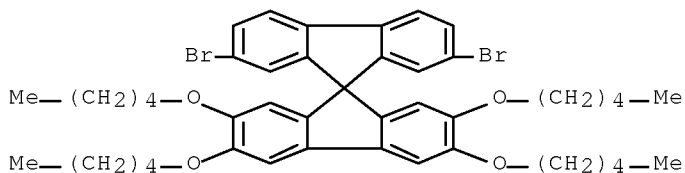
CRN 287976-94-7  
 CMF C22 H21 Br2 N



RN 854922-61-5 CAPLUS  
 CN 1,4-Benzenediamine, N,N'-bis(4-bromophenyl)-N,N'-bis(4-butylphenyl)-2-fluoro-, polymer with 2',7'-dibromo-2,3,6,7-tetrakis(pentyloxy)-9,9'-spirobi[9H-fluorene] and 2,2'-[2',3',6',7'-tetrakis(pentyloxy)-9,9'-spirobi[9H-fluorene]-2,7-diyl]bis[1,3,2-dioxaborolane] (9CI) (CA INDEX NAME)

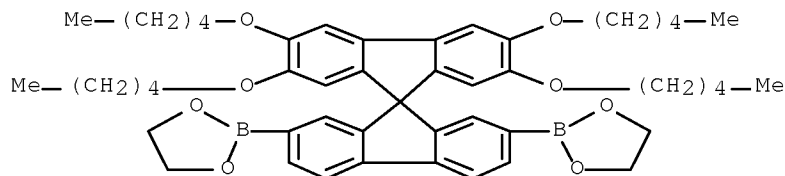
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CRN 854922-57-9  
 CMF C45 H54 Br2 O4



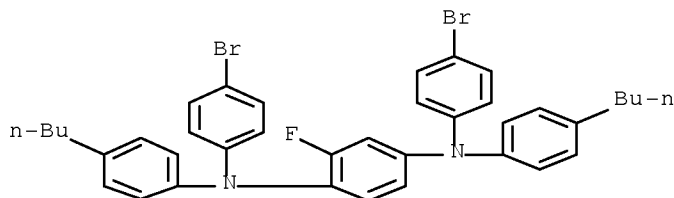
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CRN 854922-56-8  
CMF C49 H62 B2 O8



CM 3

CRN 854922-35-3  
CMF C38 H37 Br2 F N2



OS.CITING REF COUNT: 2 THERE ARE 2 CAPLUS RECORDS THAT CITE THIS RECORD  
(2 CITINGS)  
REFERENCE COUNT: 7 THERE ARE 7 CITED REFERENCES AVAILABLE FOR THIS  
RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L15 ANSWER 2 OF 9 CAPLUS COPYRIGHT 2010 ACS on STN

ACCESSION NUMBER: 2003:868360 CAPLUS Full-text

DOCUMENT NUMBER: 139:371610

TITLE: Organic electroluminescent materials and devices  
having high luminescent efficiency and color purity

INVENTOR(S): Funabashi, Masakazu; Iwakuma, Toshihiro; Hosokawa,  
Chishio

PATENT ASSIGNEE(S): Idemitsu Kosan Co., Ltd., Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 13 pp.

CODEN: JKXXAF

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2003313547	A	20031106	JP 2002-116935	20020419
PRIORITY APPLN. INFO.:			JP 2002-116935	20020419
OTHER SOURCE(S):			MARPAT 139:371610	

AB The materials are Ar1(NAr4Ar6)n(NAr5Ar7)mNAr2Ar3 [n= 1-3; m = 0-2; Ar1-Ar3,  
Ar6, Ar7 = 1,2-, 1,3-, or 1,4-(perfluoro)phenyl (structures given); ≥1 of Ar1-

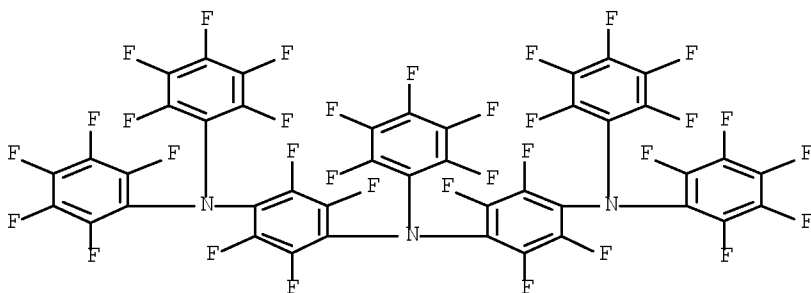
Ar3, Ar6, Ar7 = perfluorophenyl; Ar4, Ar5 = 1,2-, 1,3-, or 1,4-(perfluoro)phenylene (structures given); Ar4 and/or Ar5 = perfluorophenylene]. The devices, preferably blue-emitting, contain the materials as host materials in emitter layers and are useful as light sources for elec. apparatus

IT 620607-86-5P

RL: DEV (Device component use); IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses) (fluorophenylamines as host materials in emitter layers in organic electroluminescent devices)

RN 620607-86-5 CAPLUS

CN 1,4-Benzenediamine, N1-[4-[bis(2,3,4,5,6-pentafluorophenyl)amino]-2,3,5,6-tetrafluorophenyl]-2,3,5,6-tetrafluoro-N1,N4,N4-tris(2,3,4,5,6-pentafluorophenyl)- (CA INDEX NAME)



OS.CITING REF COUNT: 2 THERE ARE 2 CAPLUS RECORDS THAT CITE THIS RECORD (2 CITINGS)

L15 ANSWER 3 OF 9 CAPLUS COPYRIGHT 2010 ACS on STN

ACCESSION NUMBER: 2001:482850 CAPLUS Full-text

DOCUMENT NUMBER: 135:256871

TITLE: Nucleophilic reactivity. Kinetics of reactions between diarylamine N-anions and hexafluorobenzene or pentafluoropyridine in dimethyl sulfoxide

AUTHOR(S): Os'kina, I. A.; Vlasov, V. M.

CORPORATE SOURCE: Vorozhtsov Novosibirsk Institute of Organic Chemistry, Siberian Division, Russian Academy of Sciences, Novosibirsk, 630090, Russia

SOURCE: Russian Journal of Organic Chemistry (Translation of Zhurnal Organicheskoi Khimii) (2001), 37(2), 260-269 CODEN: RJOCEQ; ISSN: 1070-4280

PUBLISHER: MAIK Nauka/Interperiodica Publishing

DOCUMENT TYPE: Journal

LANGUAGE: English

OTHER SOURCE(S): CASREACT 135:256871

AB Rate consts. of reactions between sodium salts of diarylamines and hexafluorobenzene and pentafluoropyridine in DMSO at 25°C were determined. The Bronsted factors for substrates under consideration are 0.14 and 0.34 resp. These data evidence a considerable effect of substrate electrophilicity on the reactivity of diarylamine N-anions in the S<sub>N</sub>Ar reactions. Deviations of the Bronsted plot from linearity for the reactions of hexafluorobenzene with aryl- and diarylamine N-anions may be due to the difference in internal barriers of these reactions.

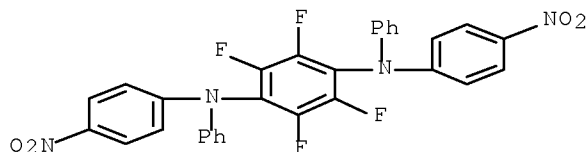
IT 361433-15-0P

RL: SPN (Synthetic preparation); PREP (Preparation)

(kinetics of reactions between diarylamine N-anions and  
hexafluorobenzene or pentafluoropyridine in DMSO)

RN 361433-15-0 CAPLUS

CN 1,4-Benzenediamine, 2,3,5,6-tetrafluoro-N1,N4-bis(4-nitrophenyl)-N1,N4-  
diphenyl- (CA INDEX NAME)



OS.CITING REF COUNT: 2 THERE ARE 2 CAPLUS RECORDS THAT CITE THIS RECORD  
(2 CITINGS)  
REFERENCE COUNT: 49 THERE ARE 49 CITED REFERENCES AVAILABLE FOR THIS  
RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L15 ANSWER 4 OF 9 CAPLUS COPYRIGHT 2010 ACS on STN

ACCESSION NUMBER: 1998:651124 CAPLUS Full-text

DOCUMENT NUMBER: 129:308409

ORIGINAL REFERENCE NO.: 129:62808a,62809a

TITLE: Positive-hole injection material for organic  
electroluminescent device

INVENTOR(S): Enokida, Toshio; Onikubo, Shunichi; Tamano, Michiko;  
Okutsu, Satoshi

PATENT ASSIGNEE(S): Toyo Ink Mfg. Co., Ltd., Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 43 pp.

CODEN: JKXXAF

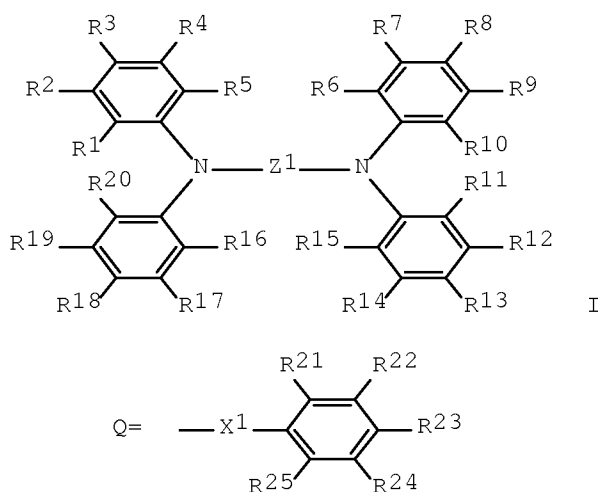
DOCUMENT TYPE: Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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JP 10265773	A	19981006	JP 1997-69911	19970324
PRIORITY APPLN. INFO.:			JP 1997-69911	19970324
OTHER SOURCE(S):	MARPAT	129:308409		
GI				



AB The material has a formula I [R1-20 = H, halo, alkyl, alkoxy, thioalkoxy, amino, monocyclic group, polycyclic group, Q; R21-25 = H, halo, alkyl, alkoxy, thioalkoxy, amino, monocyclic group, polycyclic group; R21-25 may form a cycloalkyl ring, aryl ring; X1 = direct bond, alkylene, (CR26R27)<sub>x</sub>O(CR28R29)<sub>y</sub>, (CR30R31)<sub>x</sub>S(CR32R33)<sub>y</sub>, O, S, CO, SO<sub>2</sub>, SiR34(R35), NR36, PR37, PO(R38); x, y = 0-8 integer; x = y ≠ 0; Z1 = Ar1, Ar2NR39Ar3, Ar4NR40Ar5NR41Ar6; Ar1-6 = arylene; R26-41 = alkyl, monocyclic group, polycyclic group]. The device shows high luminance, efficiency, long life, and storage stability.

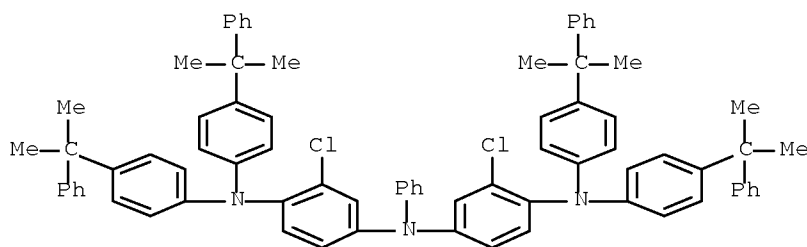
IT 214338-54-2

RL: DEV (Device component use); MOA (Modifier or additive use); USES (Uses)

(organic electroluminescent device containing aromatic pos.-hole injection material)

RN 214338-54-2 CAPLUS

CN 1,4-Benzenediamine, N4-[4-[bis[4-(1-methyl-1-phenylethyl)phenyl]amino]-3-chlorophenyl]-2-chloro-N1,N1-bis[4-(1-methyl-1-phenylethyl)phenyl]-N4-phenyl- (CA INDEX NAME)



OS.CITING REF COUNT: 8 THERE ARE 8 CAPLUS RECORDS THAT CITE THIS RECORD (8 CITINGS)

L15 ANSWER 5 OF 9 CAPLUS COPYRIGHT 2010 ACS on STN  
 ACCESSION NUMBER: 1989:644275 CAPLUS Full-text  
 DOCUMENT NUMBER: 111:244275

ORIGINAL REFERENCE NO.: 111:40359a,40362a  
 TITLE: Electrophotographic photoconductor containing pyrrolopyrrole  
 INVENTOR(S): Hanatani, Yasuyuki; Nakatani, Kaname  
 PATENT ASSIGNEE(S): Mita Industrial Co., Ltd., Japan  
 SOURCE: Jpn. Kokai Tokkyo Koho, 23 pp.  
 CODEN: JKXXAF  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Japanese  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
-----	----	-----	-----	-----
JP 01142657	A	19890605	JP 1987-301856	19871130
PRIORITY APPLN. INFO.:			JP 1987-301856	19871130

GI

\* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT \*

AB The title photoconductor, on an elec. conductive substrate, contains a a pyrrolopyrrole I [R1-2 = (substituted) aryl, aralkyl, heterocycle; R3-4 = H, alkyl, (substituted) aryl] and a diamine II [R5-9 = H, lower alkyl, lower alkoxy, halo; l = 1, 2; m, n, o, p = 1, 2, 3; q = 1, 2]. The photoconductor shows reduced residual elec. potential. Thus, on an Al sheet, a composition comprising 1,4-dithioketo-3,6-diphenylpyrrolo[3,4- c]pyrrole, S-Lec C, and THF was applied, dried, and coated with a PhH solution containing diamine III, and PCZ (bisphenol polycarbonates) to give the title photoconductor.

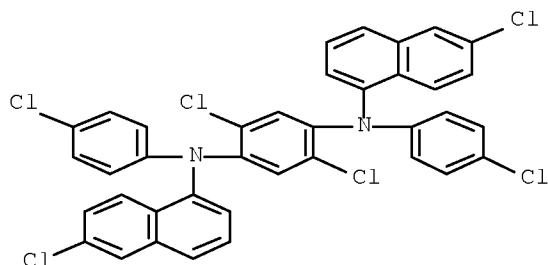
IT 123847-84-7 123865-10-1

RL: USES (Uses)

(charge-transporting layer containing, for electrophotog. photoconductor, pyrrolopyrrole in)

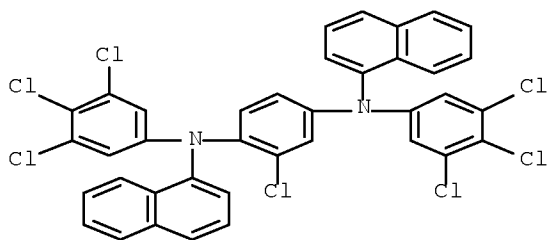
RN 123847-84-7 CAPLUS

CN 1,4-Benzenediamine, 2,5-dichloro-N1,N4-bis(6-chloro-1-naphthalenyl)-N1,N4-bis(4-chlorophenyl)- (CA INDEX NAME)



RN 123865-10-1 CAPLUS

CN 1,4-Benzenediamine, 2-chloro-N1,N4-di-1-naphthalenyl-N1,N4-bis(3,4,5-trichlorophenyl)- (CA INDEX NAME)



L15 ANSWER 6 OF 9 CAPLUS COPYRIGHT 2010 ACS on STN

ACCESSION NUMBER: 1987:205158 CAPLUS Full-text

DOCUMENT NUMBER: 106:205158

ORIGINAL REFERENCE NO.: 106:33113a,33116a

TITLE: Electrophotographic photoreceptor containing charge-generating tetrakisazo compounds

INVENTOR(S): Umehara, Masashige; Matsumoto, Masakazu; Takiguchi, Takao; Yamashita, Masataka; Ishikawa, Shozo

PATENT ASSIGNEE(S): Canon K. K., Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 41 pp.

CODEN: JKXXAF

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 6

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
-----	----	-----	-----	-----
JP 61240246	A	19861025	JP 1985-80248	19850417
JP 04002948	B	19920121		
US 4666810	A	19870519	US 1986-852243	19860415
PRIORITY APPLN. INFO.:			JP 1985-80248	A 19850417
			JP 1985-157699	A 19850717
			JP 1985-157700	A 19850717
			JP 1985-159401	A 19850718
			JP 1985-159402	A 19850718
			JP 1985-159403	A 19850718

ASSIGNMENT HISTORY FOR US PATENT AVAILABLE IN LSUS DISPLAY FORMAT

AB The tetrakisazo compound has the formula

(AN:NZ2)(AN:NZ3)NZ1N(Z4N:NA)(Z5N:NA)(I; A = coupler residue with a phenolic OH group; Z1-Z5 = arylene). An electrophotog. composite photoconductor may be prepared by dispersing a tetrakisazo compound of the formula I (A = naphthol AS coupler residue; Z1-Z5 = 1, 4-phenylene) in a poly(vinyl butyral) binder to form a charge-generating layer and dispersing a hydrazone compound in a PMMA binder to give a charge-transport layer. The photoreceptor shows improved sensitivity and durability.

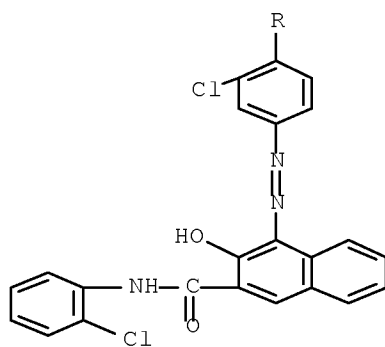
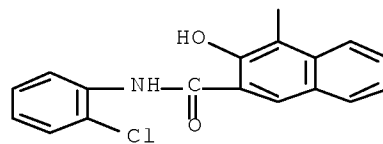
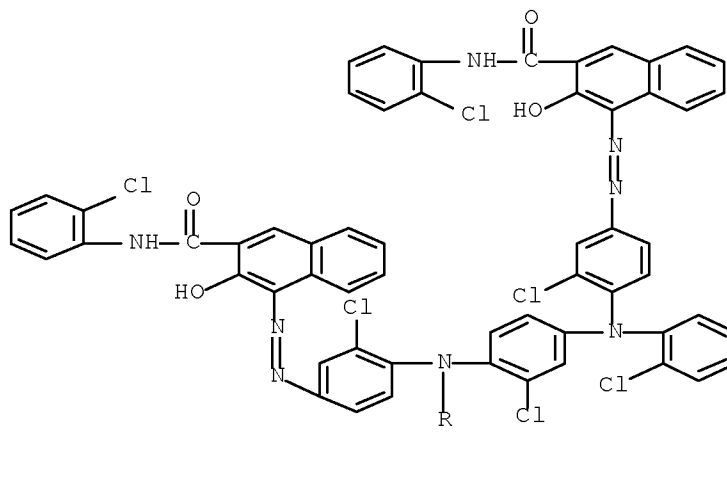
IT 108305-34-6

RL: USES (Uses)

(electrophotog. photoreceptor containing charge-generating agent from, with improved sensitivity)

RN 108305-34-6 CAPLUS

CN 2-Naphthalenecarboxamide, 4,4',4'',4'''-[(2-chloro-1,4-phenylene)bis[nitrilobis[(3-chloro-4,1-phenylene)azo]]]tetrakis[N-(2-chlorophenyl)-3-hydroxy- (9CI) (CA INDEX NAME)



OS.CITING REF COUNT: 5 THERE ARE 5 CAPLUS RECORDS THAT CITE THIS RECORD  
(5 CITINGS)

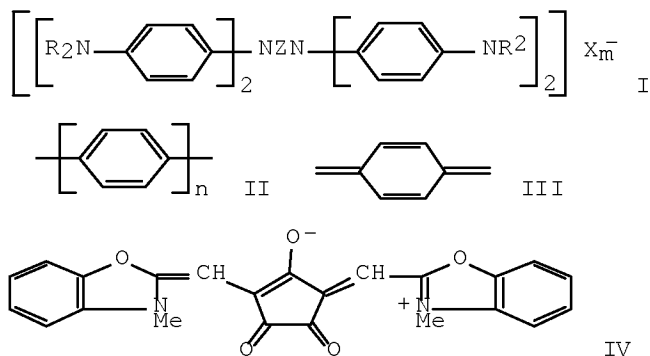
L15 ANSWER 7 OF 9 CAPLUS COPYRIGHT 2010 ACS on STN  
ACCESSION NUMBER: 1986:234361 CAPLUS Full-text  
DOCUMENT NUMBER: 104:234361  
ORIGINAL REFERENCE NO.: 104:37011a,37014a



TITLE: Optical information recording medium  
 INVENTOR(S): Sato, Tsutomu; Umehara, Masaakira; Abe, Michiharu;  
 Oba, Hideaki; Ueda, Yutaka  
 PATENT ASSIGNEE(S): Ricoh Co., Ltd., Japan  
 SOURCE: Brit. UK Pat. Appl., 18 pp.  
 CODEN: BAXXDU  
 DOCUMENT TYPE: Patent  
 LANGUAGE: English  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
GB 2155811	A	19851002	GB 1985-3022	19850206
GB 2155811	B	19870121		
JP 06026028	B	19940406	JP 1984-18222	19840206
JP 60236131	A	19851122	JP 1984-91922	19840510
US 4656121	A	19870407	US 1985-698701	19850206
PRIORITY APPLN. INFO.:			JP 1984-18222	A 19840206
			JP 1984-91922	A 19840510

ASSIGNMENT HISTORY FOR US PATENT AVAILABLE IN LSUS DISPLAY FORMAT  
 GI



AB A laser optical recording material is comprised of a plastic substrate and an organic recording layer and, optionally, an underlayer and/or a protective layer in which  $\geq 1$  of the layers contains a compound of the formula I ( $\text{R} = \text{H}$ , lower alkyl;  $\text{Z} = \text{II}$  where  $n = 1, 2$ , III;  $\text{X} = \text{acid anion}$ ;  $m = 0, 1, 2$  being 2 when  $\text{Z} = \text{II}$ ; each of the aromatic rings in the compound may be substituted with  $\geq 1$  halogen, lower alkyl, lower alkoxy, or OH). A polymethine compound may also be contained in the recording layer as a coloring material. Thus, a 1,2-dichloroethane solution of a 1:1 mixture of I ( $\text{R} = \text{Et}$ ;  $\text{Z} = \text{phen-1,4-ylene}$ ;  $\text{X-m} = \text{BF}_4^-$ ) and IV was spin-coated on a 1.2 mm poly(Me methacrylate) support to give a recording layer (700 Å thick). The resultant laser recording material required a writing power of 3.3 mW, had a reflectivity of 25.5%, and exhibited a C/N ratio of 52 dB vs. 3.5 mW, 20.9%, and 46 dB, resp., after light irradiation for 50 h.

IT 102278-77-3 102278-79-5 102278-95-5  
 102279-03-8  
 RL: USES (Uses)

(laser optical recording layer containing polymethine coloring agent and)

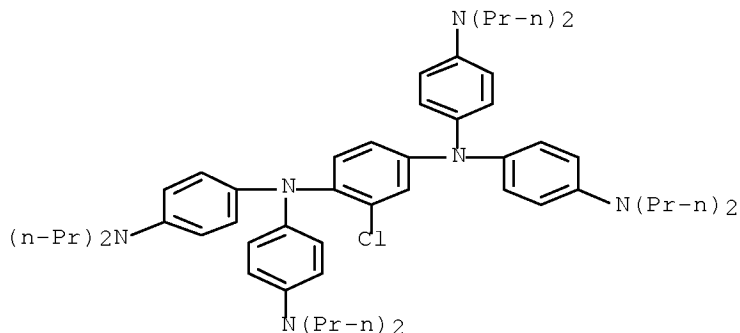
RN 102278-77-3 CAPLUS

CN Arsenate(1-), hexafluoro-, hydrogen, compd. with  
2-chloro-N,N,N',N'-tetrakis[4-(dipropylamino)phenyl]-1,4-benzenediamine  
(1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 102278-76-2

CMF C54 H75 Cl N6

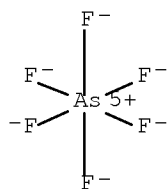


CM 2

CRN 17068-85-8

CMF As F6 . H

CCI CCS



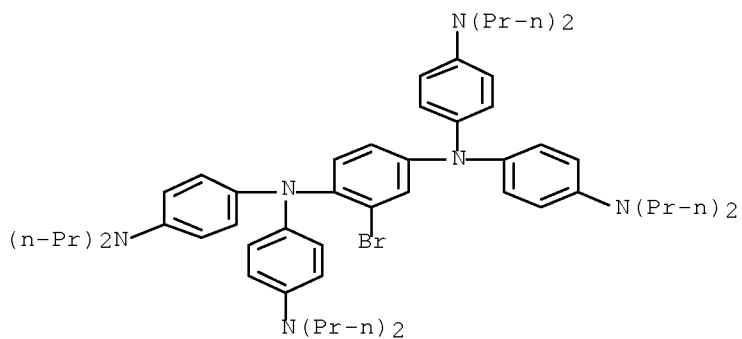
RN 102278-79-5 CAPLUS

CN Antimonate(1-), hexafluoro-, (OC-6-11)-, hydrogen, compd. with  
2-bromo-N,N,N',N'-tetrakis[4-(dipropylamino)phenyl]-1,4-benzenediamine  
(1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 102278-78-4

CMF C54 H75 Br N6

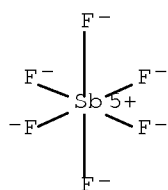


CM 2

CRN 16950-06-4

CMF F6 Sb . H

CCI CCS



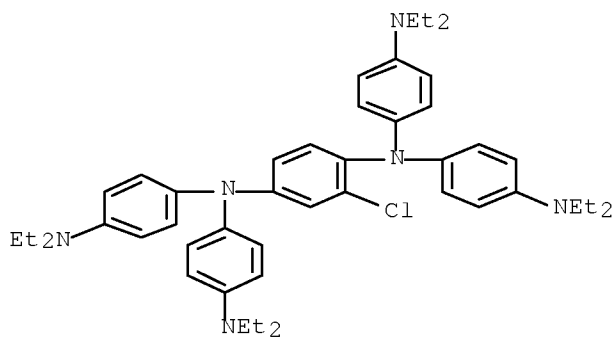
RN 102278-95-5 CAPLUS

CN 1,4-Benzenediamine, 2-chloro-N,N,N',N'-tetrakis[4-(diethylamino)phenyl]-, mono[tetrafluoroborate(1-)] (9CI) (CA INDEX NAME)

CM 1

CRN 102278-94-4

CMF C46 H59 Cl N6

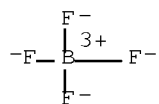


CM 2

CRN 16872-11-0

CMF B F4 . H

CCI CCS



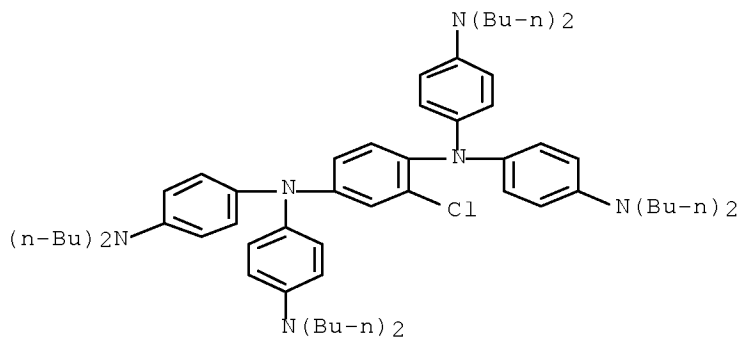
RN 102279-03-8 CAPLUS

CN Antimonate(1-), hexafluoro-, (OC-6-11)-, hydrogen, compd. with  
2-chloro-N,N,N',N'-tetrakis[4-(dibutylamino)phenyl]-1,4-benzenediamine  
(1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 102279-02-7

CMF C62 H91 C1 N6

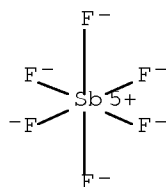


CM 2

CRN 16950-06-4

CMF F6 Sb . H

CCI CCS



OS.CITING REF COUNT: 14 THERE ARE 14 CAPLUS RECORDS THAT CITE THIS RECORD (18 CITINGS)

L15 ANSWER 8 OF 9 CAPLUS COPYRIGHT 2010 ACS on STN

ACCESSION NUMBER: 1977:73159 CAPLUS Full-text

DOCUMENT NUMBER: 86:73159

ORIGINAL REFERENCE NO.: 86:11613a,11616a

TITLE: Preparation of poly (N-phenyliminoperfluorophenylene).  
Solvent effects on reactions between anilides and hexafluorobenzene

AUTHOR(S): Koppang, Rolf

CORPORATE SOURCE: Dep. Dent. Technol., Univ. Oslo, Oslo, Norway

SOURCE: Journal of Fluorine Chemistry (1976), 8(5), 389-400

CODEN: JFLCAR; ISSN: 0022-1139

DOCUMENT TYPE: Journal

LANGUAGE: English

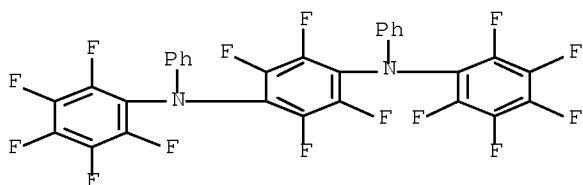
AB The reactions between anilides and hexafluorobenzene [392-56-3] were accelerated in the presence of dipolar aprotic solvents, and the yield of poly(N-phenyliminoperfluorophenylene) [61552-67-8], prepared from 2,3,4,5,6-pentafluoro-N-lithiophenylanilide [61553-15-9] and hexafluorobenzene, reflects this solvent effect. The structure and some thermal properties of the insol. polymer are discussed.

IT ~~3947-54-4P~~ ~~4630-23-3P~~ ~~61555-69-9P~~

RL: SPN (Synthetic preparation); PREP (Preparation)  
(preparation of)

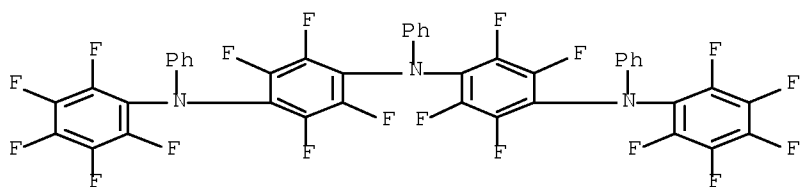
RN 3947-54-4 CAPLUS

CN 1,4-Benzenediamine, 2,3,5,6-tetrafluoro-N1,N4-bis(2,3,4,5,6-pentafluorophenyl)-N1,N4-diphenyl- (CA INDEX NAME)

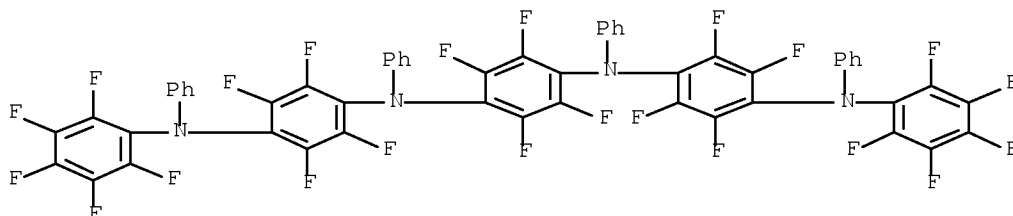


RN 4630-23-3 CAPLUS

CN 1,4-Benzenediamine, 2,3,5,6-tetrafluoro-N1-(2,3,4,5,6-pentafluorophenyl)-N1,N4-diphenyl-N4-[2,3,5,6-tetrafluoro-4-[(2,3,4,5,6-pentafluorophenyl)phenylamino]phenyl]- (CA INDEX NAME)



RN 61555-69-9 CAPLUS  
 CN 1,4-Benzenediamine, 2,3,5,6-tetrafluoro-N1,N4-diphenyl-N1,N4-bis[2,3,5,6-tetrafluoro-4-[(2,3,4,5,6-pentafluorophenyl)phenylamino]phenyl]- (CA INDEX NAME)

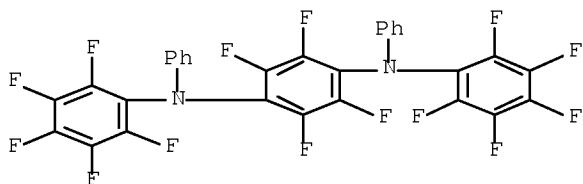


OS.CITING REF COUNT: 3 THERE ARE 3 CAPLUS RECORDS THAT CITE THIS RECORD (3 CITINGS)

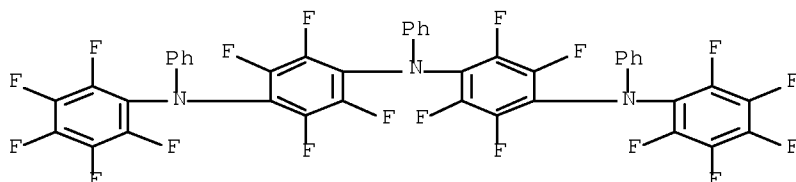
L15 ANSWER 9 OF 9 CAPLUS COPYRIGHT 2010 ACS on STN  
 ACCESSION NUMBER: 1965:29481 CAPLUS Full-text  
 DOCUMENT NUMBER: 62:29481  
 ORIGINAL REFERENCE NO.: 62:5211f-h  
 TITLE: Synthetical applications of activated metal catalysts.  
 XX. Action of degassed Raney Ni on  
 N-alkyl-o-alkylanilines  
 AUTHOR(S): Jackson, G. D. F.; Sasse, W. H. F.  
 CORPORATE SOURCE: Univ. Adelaide  
 SOURCE: Australian Journal of Chemistry (1964), 17(3), 337-46  
 CODEN: AJCHAS; ISSN: 0004-9425  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English

AB cf. CA 60, 6252b; Yeh and Kalechito, CA 55, 3588a. Several N-alkyl-o-alkylanilines were dehydrogenated with degassed Raney Ni at temps. not exceeding 230°. o-Propylaniline (I), N-methyl-o-ethylaniline (II), N-ethyl-o-toluidine (III), N-allylaniline (IV), o-ethylaniline (V), and indoline (VI) yielded complex mixts. which gave pos. Ehrlich tests. I yielded o-ethylaniline, o-toluidine, and aniline, which suggested that a stepwise degradation of the o-alkyl groups takes place. IV yielded aniline and some N-propylaniline, which indicated that N-alkyl groups are removed in one step. All the anilines gave indoles, but yields varied widely. II gave the best yield (13%), whereas III and IV yielded amts. detected only by paper chromatography. II was the only aniline to give both indole and 3-methylindole. II also was found to give all compds. (including carbazole) which so far have been identified among the products of the action of degassed Raney Ni on quinoline. It is concluded that the mechanism of the conversion of quinoline to indole and 3-methylindole proceeds by way of II.

IT 3947-54-4P, p-Phenylenediamine,  
 2,3,5,6-tetrafluoro-N,N'-bis(pentafluorophenyl)-N,N'-diphenyl-  
 4630-23-3P, Triphenylamine,  
 2,2',3,3',5,5',6,6'-octafluoro-4,4'-bis(2,3,4,5,6-pentafluoro-N-  
 phenylanilino)-  
 RL: PREP (Preparation)  
 (preparation of)  
 RN 3947-54-4 CAPLUS  
 CN 1,4-Benzenediamine, 2,3,5,6-tetrafluoro-N1,N4-bis(2,3,4,5,6-  
 pentafluorophenyl)-N1,N4-diphenyl- (CA INDEX NAME)

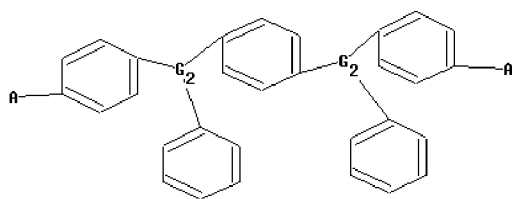


RN 4630-23-3 CAPLUS  
 CN 1,4-Benzenediamine, 2,3,5,6-tetrafluoro-N1-(2,3,4,5,6-pentafluorophenyl)-  
 N1,N4-diphenyl-N4-[2,3,5,6-tetrafluoro-4-[(2,3,4,5,6-  
 pentafluorophenyl)phenylamino]phenyl]- (CA INDEX NAME)

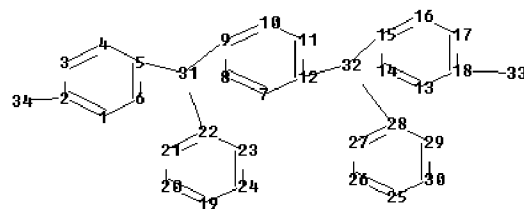


=>

Uploading C:\Program Files\STNEXP\Queries\10582459#1.str



G<sub>2</sub>-Hy-G<sub>2</sub>



42-39-48

chain nodes :

31 32 33 34 39 40 42

ring nodes :

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23

24 25 26 27 28 29 30

chain bonds :

2-34 5-31 9-31 12-32 15-32 18-33 22-31 28-32 39-40 39-42

```

ring bonds :
1-2  1-6  2-3  3-4  4-5  5-6  7-8  7-12  8-9  9-10  10-11  11-12  13-14  13-18  14-
15
15-16  16-17  17-18  19-20  19-24  20-21  21-22  22-23  23-24  25-26  25-30  26-27
27-28  28-29
29-30
exact/norm bonds :
2-34  5-31  9-31  12-32  15-32  18-33  22-31  28-32  39-40  39-42
normalized bonds :
1-2  1-6  2-3  3-4  4-5  5-6  7-8  7-12  8-9  9-10  10-11  11-12  13-14  13-18  14-
15
15-16  16-17  17-18  19-20  19-24  20-21  21-22  22-23  23-24  25-26  25-30  26-27
27-28  28-29
29-30
isolated ring systems :
containing 1 : 7 : 13 : 19 : 25 :

```

G1: Ak, H

G2: N, P

G3: B, X

```

Match level :
1:Atom  2:Atom  3:Atom  4:Atom  5:Atom  6:Atom  7:Atom  8:Atom  9:Atom  10:Atom
11:Atom 12:Atom 13:Atom 14:Atom 15:Atom 16:Atom 17:Atom 18:Atom 19:Atom
20:Atom 21:Atom
22:Atom 23:Atom 24:Atom 25:Atom 26:Atom 27:Atom 28:Atom 29:Atom 30:Atom
31:CLASS 32:CLASS
33:CLASS 34:CLASS 39:Atom 40:CLASS 42:CLASS
Generic attributes :
39:
Saturation          : Unsaturated

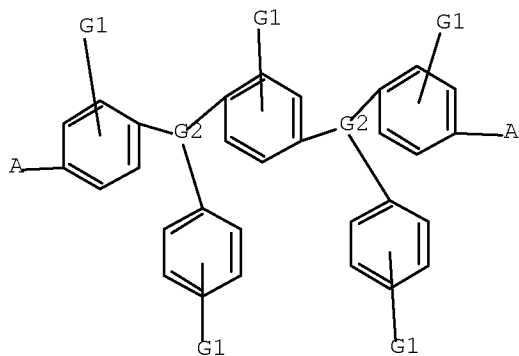
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L1 STRUCTURE UPLOADED

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L1 HAS NO ANSWERS

L1 STR



G1 Ak, H

G2 N, P



Structure attributes must be viewed using STN Express query preparation.

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=> s spirobifluorene/cn
L2          1 SPIROBIFLUORENE/CN
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=> d rsd
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L2 ANSWER 1 OF 1 REGISTRY COPYRIGHT 2010 ACS on STN

Ring System Data

Elemental Analysis EA	Elemental Sequence ES	Size of the Rings SZ	Ring System Formula RF	Ring Identifier RID	RID Count
C5-C5-C6-C6- C6-C6	C5-C5-C6-C6- C6-C6	5-5-6-6-6-6	C25	9841.9.1	1

```
=> s 9841.9/rid and L1
COMBINATION OF STRUCTURE AND TEXT TERMS NOT VALID
The query entered contains both search terms created by
structure-building or screen commands and text search terms. L#s
created via the STRUCTURE or SCREEN commands must be searched in the
structures files separately from text terms or profiles. The L#
answer sets from structure searches can be used in crossover searches
and can be combined with text terms.
```

```
=> s l1
SAMPLE SEARCH INITIATED 16:52:05 FILE 'REGISTRY'
SAMPLE SCREEN SEARCH COMPLETED - 13445 TO ITERATE
```

100.0% PROCESSED 13445 ITERATIONS 50 ANSWERS  
INCOMPLETE SEARCH (SYSTEM LIMIT EXCEEDED)  
SEARCH TIME: 00.00.01

FULL FILE PROJECTIONS: ONLINE \*\*COMPLETE\*\*  
BATCH \*\*COMPLETE\*\*  
PROJECTED ITERATIONS: 261951 TO 275849  
PROJECTED ANSWERS: 1198 TO 2322

L3 50 SEA SSS SAM L1

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=> s l1 full
FULL SEARCH INITIATED 16:52:13 FILE 'REGISTRY'
FULL SCREEN SEARCH COMPLETED - 269408 TO ITERATE
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100.0% PROCESSED 269408 ITERATIONS 1906 ANSWERS  
SEARCH TIME: 00.00.02

L4 1906 SEA SSS FUL L1

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=> s l4 and 9841.1/rid
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107 9841.1/RID  
L5 0 L4 AND 9841.1/RID

=> s l4 and 9841.1/rid  
107 9841.1/RID  
L6 0 L4 AND 9841.1/RID

=> s indenofluorene/cn  
L7 0 INDENOFLUORENE/CN

=> s benzene/cn  
L8 1 BENZENE/CN

=> d rsd

L8 ANSWER 1 OF 1 REGISTRY COPYRIGHT 2010 ACS on STN

#### Ring System Data

Elemental Analysis	Elemental Sequence	Size of the Rings	Ring System Formula	Ring Identifier	RID Occurrence
EA	ES	SZ	RF	RID	Count
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=> s l4 and 46.150/rid  
37714236 46.150/RID  
L9 1906 L4 AND 46.150/RID

This file contains CAS Registry Numbers for easy and accurate  
substance identification.

=> s l9  
L10 1131 L9

=> s l10 and polymer?  
2430238 POLYMER?  
101933 POLYMD  
101933 POLYMD  
40369 POLYMG  
414644 POLYMN  
11220 POLYMNS  
416171 POLYMN  
(POLYMN OR POLYMNS)  
2514766 POLYMER?  
(POLYMER? OR POLYMD OR POLYMG OR POLYMN)  
L11 495 L10 AND POLYMER?

=> s l11 and electrolumin?  
112644 ELECTROLUMIN?  
L12 257 L11 AND ELECTROLUMIN?

=> d ibib abs hitstr 255-257

L12 ANSWER 255 OF 257 CAPLUS COPYRIGHT 2010 ACS on STN  
ACCESSION NUMBER: 1997:618270 CAPLUS Full-text  
DOCUMENT NUMBER: 127:263592

ORIGINAL REFERENCE NO.: 127:51481a,51484a  
 TITLE: Crosslinkable or chain extendable polyarylpolyamines  
 and films for ~~electroluminescent~~ devices  
 INVENTOR(S): Woo, Edmund P.; Inbasekaran, Michael; Shiang, William  
 R.; Roof, Gordon R.; Wu, Weishi  
 PATENT ASSIGNEE(S): Dow Chemical Co., USA  
 SOURCE: PCT Int. Appl., 57 pp.  
 CODEN: PIXXD2  
 DOCUMENT TYPE: Patent  
 LANGUAGE: English  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 9733193	A2	19970912	WO 1997-US2643	19970220
WO 9733193	A3	20020926		
W: AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GE, HU, IL, IS, JP, KE, KG, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, TJ, TM, TR, TT, UA, UG, UZ, VN, YU				
RW: KE, LS, MW, SD, SZ, UG, AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, NE, SN, TD, TG				
AU 9722776	A	19970922	AU 1997-22776	19970220
US 5929194	A	19990727	US 1997-967348	19971027
PRIORITY APPLN. INFO.:			US 1996-606180	A 19960223
			US 1996-696280	A 19960813
			WO 1997-US2643	W 19970220

ASSIGNMENT HISTORY FOR US PATENT AVAILABLE IN LSUS DISPLAY FORMAT

OTHER SOURCE(S): MARPAT 127:263592

AB The polyarylpolyamines are prepared by the reaction of  $\geq 1$  tertiary di- or  
 polyarylamine having 2 halogen substituents with a haloarom. compound having a  
 crosslinkable reactive group or trialkylsiloxy moiety. Films of the title  
 compds., as well as films of polymers of their crosslinkable species, are  
 efficient in the transport of pos. charges when exposed to relatively low  
 voltage levels, and demonstrate solvent and heat resistance.

IT 113703-67-6P

RL: IMF (Industrial manufacture); PREP (Preparation)  
 (crosslinkable or chain extendable polyarylpolyamines for  
 solvent-resistant films for ~~electroluminescent~~ devices)

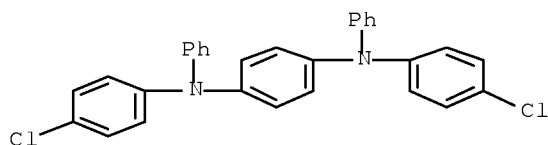
RN 113703-67-6 CAPLUS

CN 1,4-Benzenediamine, N,N'-bis(4-chlorophenyl)-N,N'-diphenyl-, homopolymer  
 (9CI) (CA INDEX NAME)

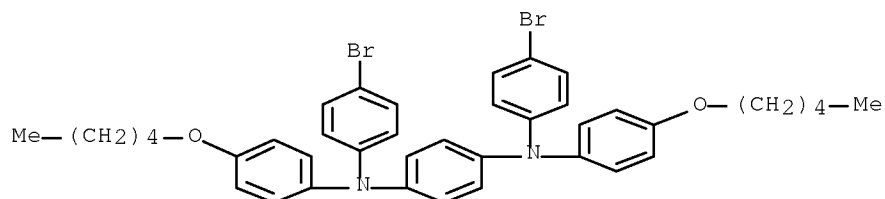
CM 1

CRN 113703-66-5

CMF C30 H22 C12 N2



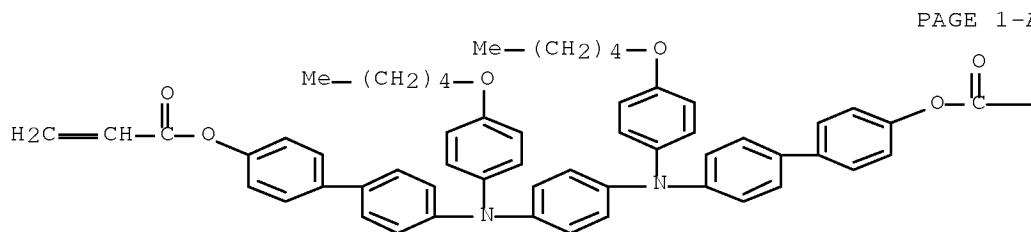
IT 195730-42-8DP, reaction products with silyl-containing  
benzeneboronic acid  
RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT  
(Reactant or reagent)  
(crosslinkable or chain extendable polyarylpolyamines for  
solvent-resistant films for electroluminescent devices)  
RN 195730-42-8 CAPLUS  
CN 1,4-Benzenediamine, N1,N4-bis(4-bromophenyl)-N1,N4-bis[4-  
(pentyloxy)phenyl]- (CA INDEX NAME)



IT 195730-45-1P 195730-55-3P  
RL: IMF (Industrial manufacture); PREP (Preparation)  
(film; crosslinkable or chain extendable polyarylpolyamines for  
solvent-resistant films for electroluminescent devices)  
RN 195730-45-1 CAPLUS  
CN 2-Propenoic acid, 2-ethyl-2-[[[(1-oxo-2-propenyl)oxy]methyl]-1,3-  
propanediyl ester, polymer with 1,4-phenylenebis[[[4-  
(pentyloxy)phenyl]imino][1,1'-biphenyl]-4',4-diyl] di-2-propenoate (9CI)  
(CA INDEX NAME)

CM 1

CRN 195730-44-0  
CMF C58 H56 N2 O6



PAGE 1-A

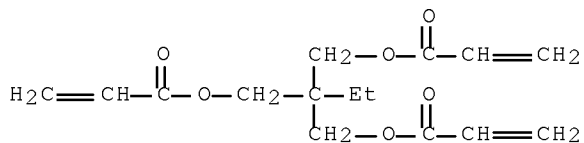
PAGE 1-B

—CH=CH2

CM 2

CRN 15625-89-5

CMF C15 H20 O6



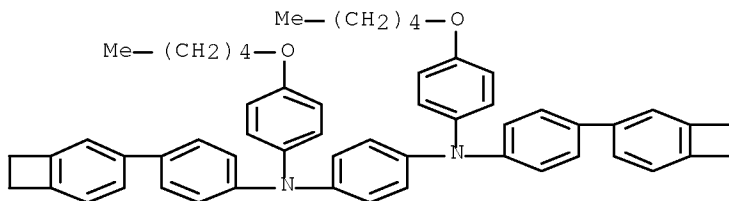
RN 195730-55-3 CAPLUS

CN 1,4-Benzenediamine, N,N'-bis(4-bicyclo[4.2.0]octa-1,3,5-trien-3-ylphenyl)-  
N,N'-bis[4-(pentyloxy)phenyl]-, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 195730-53-1

CMF C56 H56 N2 O2



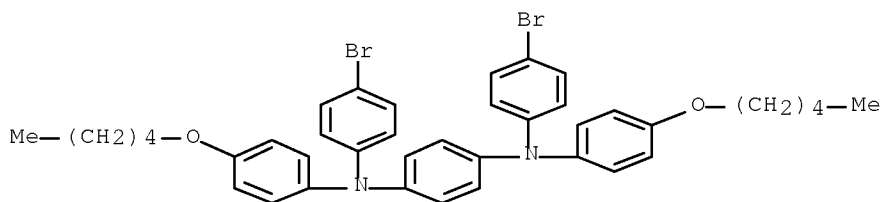
IT 195730-42-8P

RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT  
(Reactant or reagent)

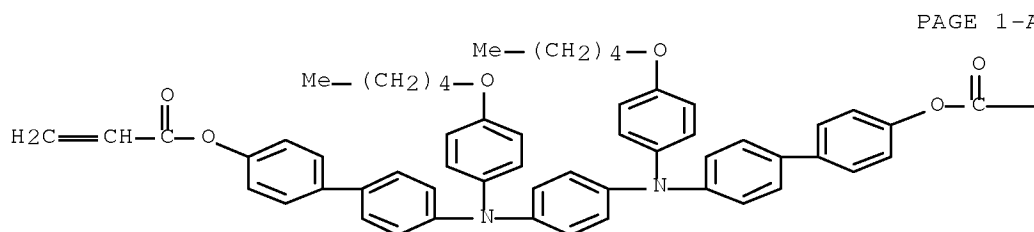
(intermediate; crosslinkable or chain extendable polyarylpolyamines for  
solvent-resistant films for electroluminescent devices)

RN 195730-42-8 CAPLUS

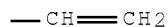
CN 1,4-Benzenediamine, N1,N4-bis(4-bromophenyl)-N1,N4-bis[4-  
(pentyloxy)phenyl]- (CA INDEX NAME)



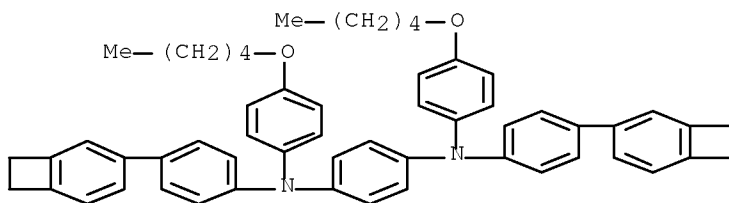
IT 195730-44-0P 195730-53-1P  
 RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT  
 (Reactant or reagent)  
 (preparation and polymerization; crosslinkable or chain extendable  
 polyarylpolyamines for solvent-resistant films for  
 electroluminescent devices)  
 RN 195730-44-0 CAPLUS  
 CN 2-Propenoic acid, 1,4-phenylenebis[[[(4-pentyloxy)phenyl]imino][1,1'-  
 biphenyl]-4',4-diyl] ester (9CI) (CA INDEX NAME)



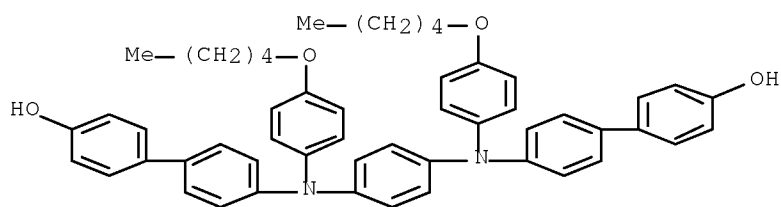
PAGE 1-B



RN 195730-53-1 CAPLUS  
 CN 1,4-Benzenediamine, N1,N4-bis(4-bicyclo[4.2.0]octa-1,3,5-trien-3-ylphenyl)-  
 N1,N4-bis[4-(pentyloxy)phenyl]- (CA INDEX NAME)



IT 195730-43-9P  
 RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT  
 (Reactant or reagent)  
 (reaction with acryloyl chloride; crosslinkable or chain extendable  
 polyarylpolyamines for solvent-resistant films for  
 electroluminescent devices)  
 RN 195730-43-9 CAPLUS  
 CN [1,1'-Biphenyl]-4-ol, 4',4'''-[1,4-phenylenebis[[4-(  
 pentyloxy)phenyl]imino]]bis- (9CI) (CA INDEX NAME)



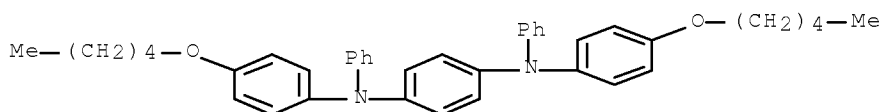
IT 195730-40-6P

RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)

(reaction with bromosuccinimide; crosslinkable or chain extendable polyarylpolyamines for solvent-resistant films for electroluminescent devices)

RN 195730-40-6 CAPLUS

CN 1,4-Benzenediamine, N1,N4-bis[4-(pentyloxy)phenyl]-N1,N4-diphenyl- (CA INDEX NAME)



OS.CITING REF COUNT: 29 THERE ARE 29 CAPLUS RECORDS THAT CITE THIS RECORD (33 CITINGS)

REFERENCE COUNT: 7 THERE ARE 7 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L12 ANSWER 256 OF 257 CAPLUS COPYRIGHT 2010 ACS on STN

ACCESSION NUMBER: 1997:563439 CAPLUS Full-text

DOCUMENT NUMBER: 127:191351

ORIGINAL REFERENCE NO.: 127:37119a,37122a

TITLE: Synthesis of polymers for hole and electron transport materials in organic electroluminescent devices

AUTHOR(S): Son, Jhun Mo; Sakaki, Yuichi; Ogino, Kenji; Sato, Hisaya

CORPORATE SOURCE: Faculty of Technology, Tokyo University of Agriculture and Technology, Tokyo, 184, Japan

SOURCE: IEEE Transactions on Electron Devices (1997), 44(8), 1307-1314

CODEN: IETDAI; ISSN: 0018-9383

PUBLISHER: Institute of Electrical and Electronics Engineers

DOCUMENT TYPE: Journal

LANGUAGE: English

AB Styrene-type polymers having tetraphenylbenzidine (TPD) or tetraphenylphenyldiaminobenzene unit (PDA) and a oxadiazole unit on the side chain were prepared as hole and electron transport materials, resp., of an electroluminescent device. The device structures employed were [ITO/hole transport layer/Al] (type I), or [ITO/hole transport layer/electron transport layer/Al] (type II). Type I devices provided c.d. higher than 100 mA/cm<sup>2</sup> but no luminescence was observed Type II devices emitted luminescence of about 10

cd/m2 at the c.d. of about 170 mA/cm2. The emission maximum of these devices were 460 and 530 nm for the device using TPD and PDA, resp.

IT 194354-35-3P

RL: DEV (Device component use); PRP (Properties); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)

(preparation of styrene derivative polymers for hole and electron transport materials in organic electroluminescent devices)

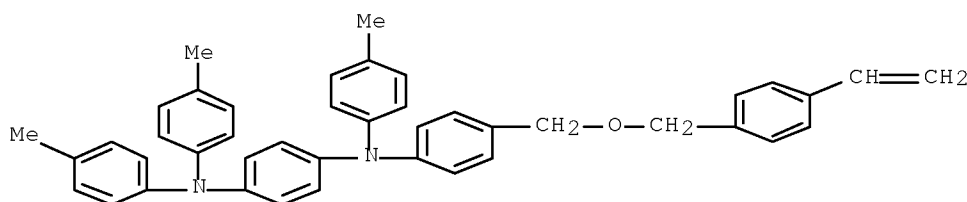
RN 194354-35-3 CAPLUS

CN 1,4-Benzenediamine, N-[4-[[[(4-ethenylphenyl)methoxy]methyl]phenyl]-N,N',N'-tris(4-methylphenyl)-, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 194354-34-2

CMF C43 H40 N2 O



OS.CITING REF COUNT: 21 THERE ARE 21 CAPLUS RECORDS THAT CITE THIS RECORD (21 CITINGS)

REFERENCE COUNT: 17 THERE ARE 17 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L12 ANSWER 257 OF 257 CAPLUS COPYRIGHT 2010 ACS on STN

ACCESSION NUMBER: 1996:560311 CAPLUS Full-text

DOCUMENT NUMBER: 125:196755

ORIGINAL REFERENCE NO.: 125:36861a,36864a

TITLE: Polymeric carrier-transporting materials for electroluminescent devices, electrophotographic photoreceptors, etc.

INVENTOR(S): Ito, Juichi; Sato, Hisaya; Hayashi, Takako

PATENT ASSIGNEE(S): Toppan Printing Co., Ltd., Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 20 pp.

CODEN: JKXXAF

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

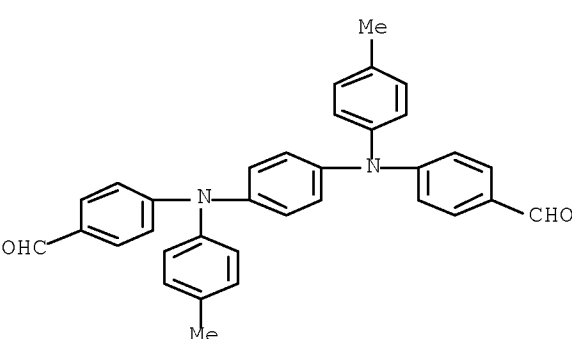
FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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JP 08157575	A	19960618	JP 1994-330622	19941207
JP 3482719	B2	20040106		
PRIORITY APPLN. INFO.:			JP 1994-330622	19941207

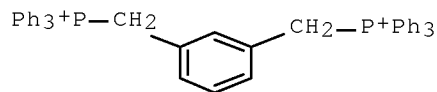
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CM 2

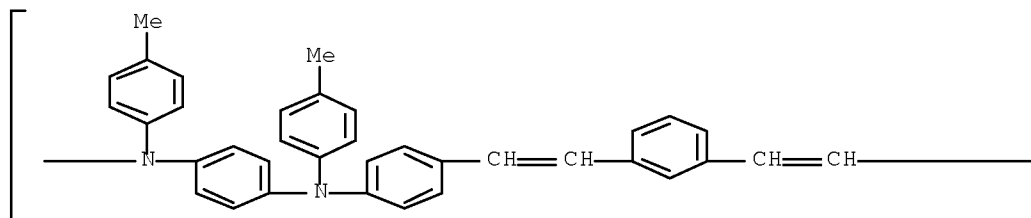
CRN 66726-75-8  
 CMF C44 H38 P2 . 2 Cl



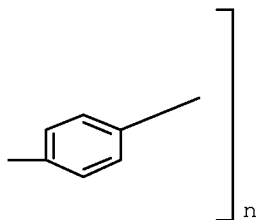
● 2 Cl-

RN 181064-90-4 CAPLUS  
 CN Poly[[ (4-methylphenyl)imino]-1,4-phenylene[(4-methylphenyl)imino]-1,4-phenylene-1,2-ethenediyl-1,3-phenylene-1,2-ethenediyl-1,4-phenylene] (9CI)  
 (CA INDEX NAME)

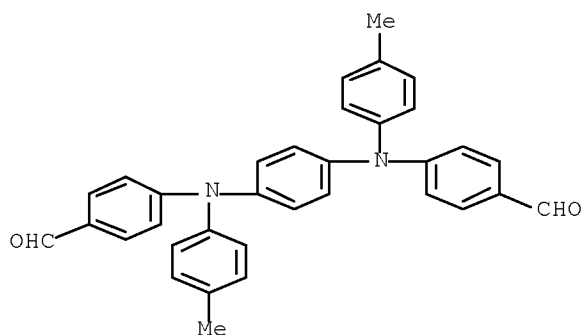
PAGE 1-A



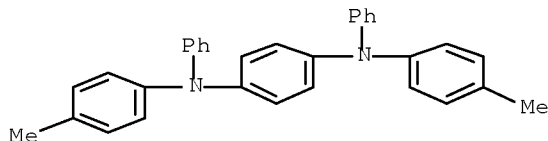
PAGE 1-B



IT 131660-39-4P 138171-14-9P  
 RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT  
 (Reactant or reagent)  
 (polymeric carrier-transporting materials for  
 electroluminescent devices and electrophotog. photoreceptors)  
 RN 131660-39-4 CAPLUS  
 CN Benzaldehyde, 4,4'-[1,4-phenylenebis[(4-methylphenyl)imino]]bis- (CA  
 INDEX NAME)



RN 138171-14-9 CAPLUS  
 CN 1,4-Benzenediamine, N1,N4-bis(4-methylphenyl)-N1,N4-diphenyl- (CA INDEX NAME)



OS.CITING REF COUNT: 3 THERE ARE 3 CAPLUS RECORDS THAT CITE THIS RECORD  
 (3 CITINGS)

=> d ibib abs hitstr 250-254

L12 ANSWER 250 OF 257 CAPLUS COPYRIGHT 2010 ACS on STN

ACCESSION NUMBER: 1999:456106 CAPLUS [Full-text](#)

DOCUMENT NUMBER: 131:206309

TITLE: Dependence of the hole-injection barrier on the hole conductor in organic light emitting diodes based on composites

AUTHOR(S): Gross, Markus; Muller, David; Brauchle, Christoph; Meerholz, Klaus

CORPORATE SOURCE: Institut fur Physikalische Chemie, Munich, 80333, Germany

SOURCE: Synthetic Metals (1999), 102(1-3), 1147-1148  
 CODEN: SYMEDZ; ISSN: 0379-6779

PUBLISHER: Elsevier Science S.A.

DOCUMENT TYPE: Journal

LANGUAGE: English

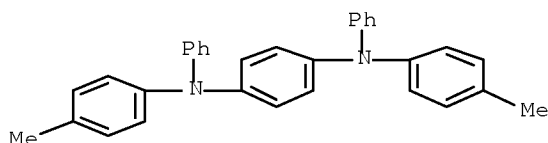
AB Organic LEDs based on composites using different hole conductors were fabricated and characterized. In these devices the current flux is limited by the injection of holes into the semi-conducting ~~polymer~~ layer through tunneling. The data were evaluated using the common Fowler-Nordheim formalism. The barrier height depends linearly on the oxidation potential of the hole conductor, but unexpectedly the slope is only  $0.55 \pm 0.1$ . This result is explained by the nonpolar nature of the internal interface between ITO and the conductive layer.

IT 138171-14-9

RL: DEV (Device component use); PEP (Physical, engineering or chemical process); PRP (Properties); PROC (Process); USES (Uses)  
(hole-injection barrier dependence on hole conductor in organic LEDs based on)

RN 138171-14-9 CAPLUS

CN 1,4-Benzenediamine, N1,N4-bis(4-methylphenyl)-N1,N4-diphenyl- (CA INDEX NAME)



OS.CITING REF COUNT: 5 THERE ARE 5 CAPLUS RECORDS THAT CITE THIS RECORD (5 CITINGS)  
REFERENCE COUNT: 10 THERE ARE 10 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L12 ANSWER 251 OF 257 CAPLUS COPYRIGHT 2010 ACS on STN

ACCESSION NUMBER: 1998:758655 CAPLUS Full-text

DOCUMENT NUMBER: 130:59045

TITLE: Styryl-containing polymer, its manufacture, and organic electroluminescent device, electrophotographic photoreceptor, and hole-transporting material using it

INVENTOR(S): Ueda, Hideaki; Kitahara, Takeshi; Nozaki, Takeshi

PATENT ASSIGNEE(S): Minolta Camera Co., Ltd., Japan; Konica Minolta Holdings, Inc.

SOURCE: Jpn. Kokai Tokkyo Koho, 17 pp.

CODEN: JKXXAF

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 2

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 10310606	A	19981124	JP 1997-119194	19970509
JP 3800720	B2	20060726		
US 6066712	A	20000523	US 1998-74914	19980508
PRIORITY APPLN. INFO.:			JP 1997-119192	A 19970509
			JP 1997-119194	A 19970509

ASSIGNMENT HISTORY FOR US PATENT AVAILABLE IN LSUS DISPLAY FORMAT

AB The styryl-containing polymer is represented by [CH<sub>2</sub>CH(Ar<sub>1</sub>CH:CHAr<sub>2</sub>)]<sub>n</sub> (Ar<sub>1</sub> = arylene; Ar<sub>2</sub> = aryl, condensed polycyclic group, heterocyclic group; Ar<sub>1</sub> and Ar<sub>2</sub> may be substituted; n = natural number). The above polymer is manufactured by (1) the reaction between a P compound [CH<sub>2</sub>CH(Ar<sub>1</sub>CH<sub>2</sub>X)]<sub>n</sub> and an aldehyde compound Ar<sub>2</sub>CHO or (2) the reaction between an aldehyde compound [CH<sub>2</sub>CH(Ar<sub>1</sub>CHO)]<sub>n</sub> and a P compound Ar<sub>2</sub>CH<sub>2</sub>X [X = PO(OR<sub>1</sub>)<sub>2</sub> or PR<sub>2</sub>Y; R<sub>1</sub> = lower alkyl; R<sub>2</sub> = cycloalkyl, aryl; Y = halo]. The electroluminescent device contains the polymer in ≥1 organic compound thin layer including a light-emitting layer and the photoreceptor contains the polymer as a charge-transporting material. The hole-transporting material composed of the polymer

is also claimed. The styryl-containing polymer shows good performance in charge-transporting and optical conductivity even after repeated use.

IT 217449-78-0

RL: DEV (Device component use); TEM (Technical or engineered material use); USES (Uses)

(styryl-containing polymer as charge-transporting material for organic electroluminescent device and electrophotog. photoreceptor)

RN 217449-78-0 CAPLUS

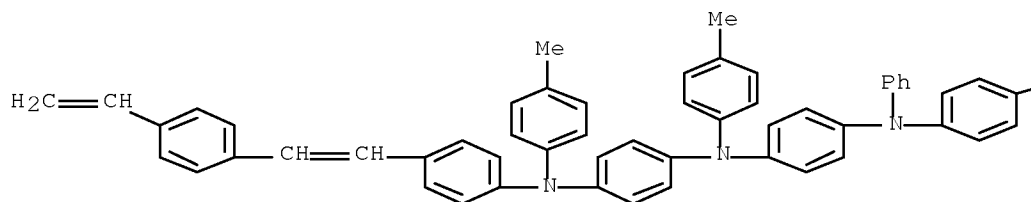
CN 1,4-Benzenediamine, N-[4-[2-(4-ethenylphenyl)ethenyl]phenyl]-N,N'-bis(4-methylphenyl)-N'-[4-[(4-methylphenyl)phenylamino]phenyl]-, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 217449-77-9

CMF C55 H47 N3

PAGE 1-A



PAGE 1-B

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OS.CITING REF COUNT: 6 THERE ARE 6 CAPLUS RECORDS THAT CITE THIS RECORD (7 CITINGS)

L12 ANSWER 252 OF 257 CAPLUS COPYRIGHT 2010 ACS on STN

ACCESSION NUMBER: 1998:649994 CAPLUS Full-text

DOCUMENT NUMBER: 129:295943

ORIGINAL REFERENCE NO.: 129:60235a,60238a

TITLE: Electroluminescent polymer compositions and processes

INVENTOR(S): Hsieh, Bing R.

PATENT ASSIGNEE(S): Xerox Corporation, USA

SOURCE: U.S., 13 pp.  
CODEN: USXXAM

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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US 5817430	A	19981006	US 1996-751532	19961113
US 5876865	A	19990302	US 1998-106554	19980629
PRIORITY APPLN. INFO.:			US 1996-751532	A3 19961113

ASSIGNMENT HISTORY FOR US PATENT AVAILABLE IN LSUS DISPLAY FORMAT

AB Methods for preparing polymers are described which entail: polymerizing at least one monomer of the formula X-CH<sub>2</sub>-Ar-CH<sub>2</sub>-X' in the presence of a base and at least one chain end controlling additive of the formula R-H to form a soluble conjugated poly(arylene vinylene) of the formula R-CH<sub>2</sub>-[Ar-CHCH-]<sub>n</sub>-Ar-CH<sub>2</sub>-R (X and X' = electron withdrawing groups; R-H = compound containing at least 1 acidic proton; R = nucleophile; Ar = aryl or aromatic group with from 5-30 C atoms; and n = the number of repeating segments).

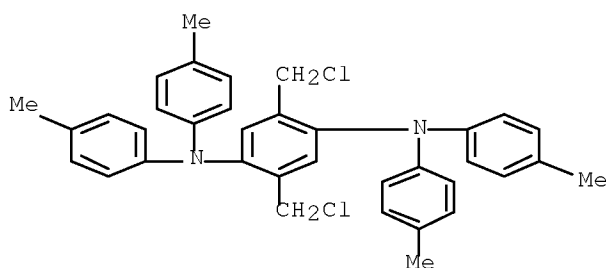
IT 214281-24-0DP, polymers, reaction products with chain end controlling additives

RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)

(electroluminescent polyarylene vinylene polymer preparation)

RN 214281-24-0 CAPLUS

CN 1,4-Benzenediamine, 2,5-bis(chloromethyl)-N,N,N',N'-tetrakis(4-methylphenyl)- (9CI) (CA INDEX NAME)



OS.CITING REF COUNT:	16	THERE ARE 16 CAPLUS RECORDS THAT CITE THIS RECORD (16 CITINGS)
REFERENCE COUNT:	2	THERE ARE 2 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L12 ANSWER 253 OF 257 CAPLUS COPYRIGHT 2010 ACS on STN

ACCESSION NUMBER: 1998:175869 CAPLUS Full-text

DOCUMENT NUMBER: 128:223710

ORIGINAL REFERENCE NO.: 128:44195a,44198a

TITLE: Heat-resistant organic electroluminescent device

INVENTOR(S): Antoniadis, Homer; Roitman, Daniel B.; Shiang, William R.; Woo, Edmund P.; Wu, Weishi

PATENT ASSIGNEE(S): Hewlett-Packard Co., USA; Dow Chemical Co.

SOURCE: Eur. Pat. Appl., 19 pp.

CODEN: EPXXDW

DOCUMENT TYPE: Patent

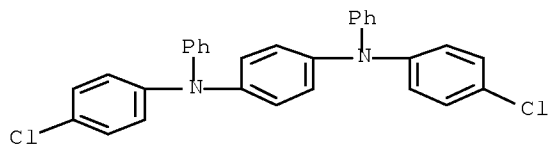
LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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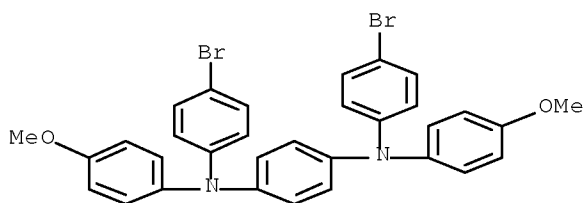
RN 202873-05-0 CAPLUS

CN 1,4-Benzenediamine, N,N'-bis(4-bromophenyl)-N,N'-bis(4-methoxyphenyl)-, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 202873-04-9

CMF C32 H26 Br2 N2 O2



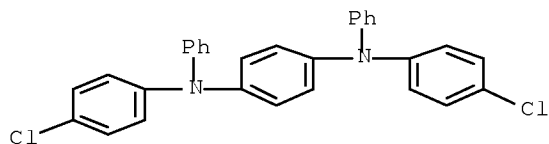
IT 113703-66-5P 124526-50-7P 202873-04-9P

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)

(heat-resistant organic electroluminescent devices with polyarylamine hole-transporting layers)

RN 113703-66-5 CAPLUS

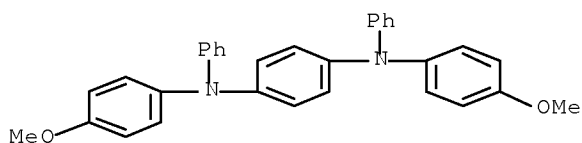
CN 1,4-Benzenediamine, N1,N4-bis(4-chlorophenyl)-N1,N4-diphenyl- (CA INDEX NAME)



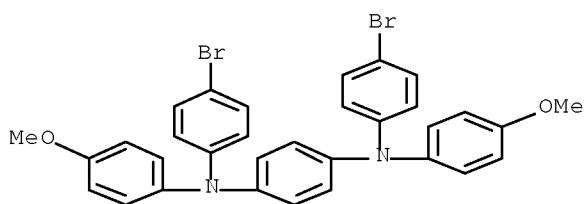
RN 124526-50-7 CAPLUS

CN 1,4-Benzenediamine, N1,N4-bis(4-methoxyphenyl)-N1,N4-diphenyl- (CA INDEX NAME)





RN 202873-04-9 CAPLUS  
 CN 1,4-Benzenediamine, N1,N4-bis(4-bromophenyl)-N1,N4-bis(4-methoxyphenyl)-  
 (CA INDEX NAME)

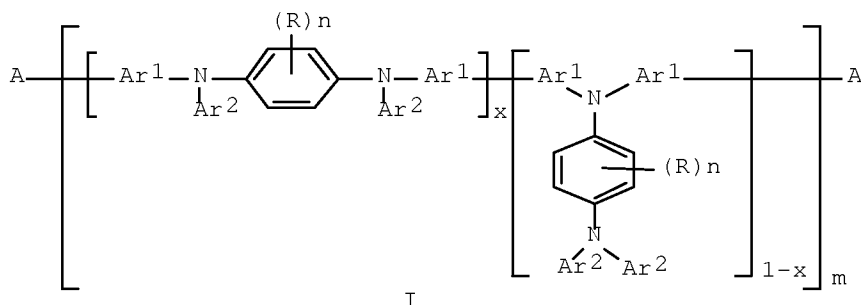


OS.CITING REF COUNT: 20 THERE ARE 20 CAPLUS RECORDS THAT CITE THIS  
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L12 ANSWER 254 OF 257 CAPLUS COPYRIGHT 2010 ACS on STN  
 ACCESSION NUMBER: 1998:126295 CAPLUS Full-text  
 DOCUMENT NUMBER: 128:180801  
 ORIGINAL REFERENCE NO.: 128:35685a,35688a  
 TITLE: Polyarylamines, their preparation, and films thereof  
 INVENTOR(S): Wu, Weishi; Shiang, William R.; Woo, Edmund P.  
 PATENT ASSIGNEE(S): Dow Chemical Company, USA  
 SOURCE: PCT Int. Appl., 25 pp.  
 CODEN: PIXXD2  
 DOCUMENT TYPE: Patent  
 LANGUAGE: English  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 9806773	A1	19980219	WO 1997-US12478	19970714
W: JP, KR				
RW: AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE				
US 5728801	A	19980317	US 1996-696281	19960813
EP 918811	A1	19990602	EP 1997-939338	19970714
EP 918811	B1	20001227		
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, FI				
AT 198338	T	20010115	AT 1997-939338	19970714
JP 2001503074	T	20010306	JP 1998-509717	19970714
JP 4172821	B2	20081029		
KR 2000029916	A	20000525	KR 1999-7001113	19990210
JP 2008069367	A	20080327	JP 2007-279072	20071026
JP 4439554	B2	20100324		
PRIORITY APPLN. INFO.:			US 1996-696281	A 19960813

ASSIGNMENT HISTORY FOR US PATENT AVAILABLE IN LSUS DISPLAY FORMAT  
 GI



AB A poly(arylamine) composition comprises one or more compds. of structure I (R = C1-24 hydrocarbyl, C1-24 hydrocarboxy, C1-24 hydrocarbylthiooxy, C1-24 hydrocarbylcarboxyl; Ar1, Ar2 = C6-18 aryl, C1-12 hydrocarbyl-, C1-12 hydrocarbyloxy-, C1-12 hydrocarbylthiooxy-, C1-12 hydrocarbylcarboxyl-substituted C6-18 aryl, A = H, halogen; x = 0, 1; n = 0-4; m = 5-1000). The monomers useful in the preparation of polyarylamines comprise two amino moieties wherein each amino moiety is bound to three aryl moieties wherein two halo moieties are optionally bound to the monomer. The invention further relates to films prepared from such polyarylamines, as well as electrophotog. devices and electroluminescent devices containing such films, such as polymeric light-emitting diodes. The invention also relates to processes for the preparation of polyarylamines.

IT 113703-67-6P 202873-05-0P

RL: IMF (Industrial manufacture); PRP (Properties); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
 (polyarylamines, their preparation, and films thereof)

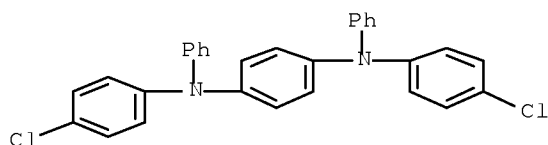
RN 113703-67-6 CAPLUS

CN 1,4-Benzenediamine, N,N'-bis(4-chlorophenyl)-N,N'-diphenyl-, homopolymer  
 (9CI) (CA INDEX NAME)

CM 1

CRN 113703-66-5

CMF C30 H22 C12 N2



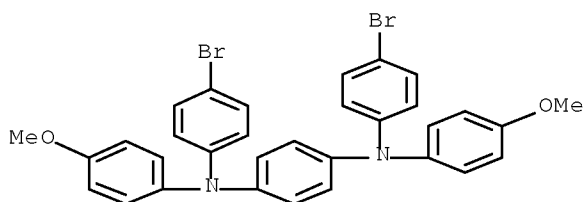
RN 202873-05-0 CAPLUS

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homopolymer (9CI) (CA INDEX NAME)

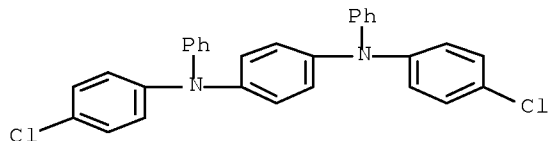
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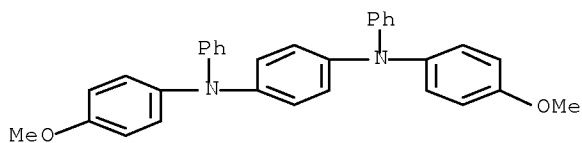
CMF C32 H26 Br2 N2 O2



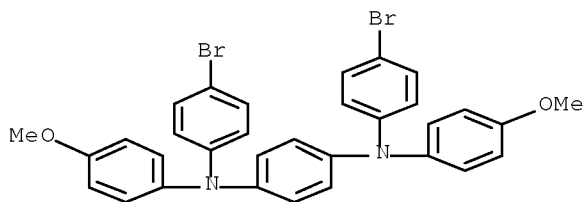
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RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT  
(Reactant or reagent)  
(polyarylamines, their preparation, and films thereof)  
RN 113703-66-5 CAPLUS  
CN 1,4-Benzenediamine, N1,N4-bis(4-chlorophenyl)-N1,N4-diphenyl- (CA INDEX  
NAME)



RN 124526-50-7 CAPLUS  
CN 1,4-Benzenediamine, N1,N4-bis(4-methoxyphenyl)-N1,N4-diphenyl- (CA INDEX  
NAME)



RN 202873-04-9 CAPLUS  
CN 1,4-Benzenediamine, N1,N4-bis(4-bromophenyl)-N1,N4-bis(4-methoxyphenyl)-  
(CA INDEX NAME)



This file contains CAS Registry Numbers for easy and accurate substance identification.

=> s l12 and spirobiflu?  
536 SPIROBIFLU?

L13 4 L12 AND SPIROBIFLU?

=> d ibib abs hitstr 4

L13 ANSWER 4 OF 4 CAPLUS COPYRIGHT 2010 ACS on STN

ACCESSION NUMBER: 2003:661197 CAPLUS [Full-text](#)

DOCUMENT NUMBER: 139:387882

TITLE: Enhanced luminance of blue light-emitting polymers by blending with hole-transporting materials

AUTHOR(S): Suh, Min Chul; Chin, Byung Doo; Kim, Mu-Hyun; Kang, Tae Min; Lee, Seong Taek

CORPORATE SOURCE: Corporate R&D Center, Samsung SDI Co., Ltd, Gyeonggi-Do, 449-902, Taiwan

SOURCE: Advanced Materials (Weinheim, Germany) (2003), 15(15), 1254-1258

CODEN: ADVMEW; ISSN: 0935-9648

PUBLISHER: Wiley-VCH Verlag GmbH & Co. KGaA

DOCUMENT TYPE: Journal

LANGUAGE: English

AB The laser-induced thermal imaging (LITI) process is well suited for patterning any type of electroluminescent spin-coatable materials. The relation and balance of LEP [light emitting polymer compns., e.g., Covion blue polymer (CB)] cohesion and interlayer adhesion between the LEP and HTL [hole transport layer] and between the LEP layer and the donor film are key issues in determining the quality of the patterning process. Optically and electronically inert polymers such as polystyrene (PS), poly(Me methacrylate) (PMMA), poly(acenaphthylene) (PANA), were evaluated in as hosts in LEP mixts. to improve LITI pattern quality. Amorphous HTMs [hole transporting materials] were also evaluated to attain a decrease in operating voltage of devices; the HTMs include 1,3,5-tris[N,N-bis(4-methoxyphenyl)aminophenyl]benzene (TDAPB), 4,4',4''-tris(N-3-methylphenyl-N-phenylamino)triphenylamine (MTDATA), N,N'-di[4-(N,N'-diphenylamino)phenyl]-N,N'-diphenylbenzidine (DNTPD), and 1,1-bis[4-bis(4-methylphenyl)aminophenyl]cyclohexane (TAPC). The process and materials were used to fabricate improved bright blue light-emitting patterned PLEDs.

IT 220865-73-6

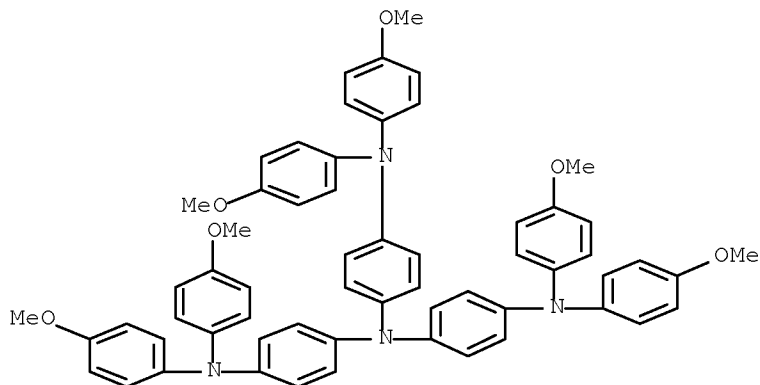
RL: DEV (Device component use); PEP (Physical, engineering or chemical process); PYP (Physical process); PROC (Process); USES (Uses)

(TDAPB, hole-transporting layer; enhanced luminance of blue PLEDs by blending blue emitter with hole-transport compds. and by fabrication using laser-induced thermal imaging patterning technique)

RN 220865-73-6 CAPLUS

CN 1,4-Benzenediamine, N1,N1-bis[4-[bis(4-methoxyphenyl)amino]phenyl]-N4,N4-

bis(4-methoxyphenyl)- (CA INDEX NAME)



OS.CITING REF COUNT: 37 THERE ARE 37 CAPLUS RECORDS THAT CITE THIS RECORD (37 CITINGS)  
REFERENCE COUNT: 21 THERE ARE 21 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

=> d ibib abs hitstr 1-3

L13 ANSWER 1 OF 4 CAPLUS COPYRIGHT 2010 ACS on STN  
ACCESSION NUMBER: 2010:505608 CAPLUS Full-text  
DOCUMENT NUMBER: 152:477664  
TITLE: Conjugated ~~polymers~~ with low polydispersity for electronic and optoelectronic applications  
INVENTOR(S): Meyer, Frank; Schulte, Niels; Kreuder, Willi  
PATENT ASSIGNEE(S): Merck Patent GmbH, Germany  
SOURCE: Ger. Offen., 20pp.; Chemical Indexing Equivalent to 152:406318 (WO)  
CODEN: GWXXBX  
DOCUMENT TYPE: Patent  
LANGUAGE: German  
FAMILY ACC. NUM. COUNT: 2  
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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DE 102008049037	A1	20100422	DE 2008-102008049037	20080925
WO 2010034393	A1	20100401	WO 2009-EP6355	20090902
W: AE, AG, AL, AM, AO, AT, AU, AZ, BA, BB, BG, BH, BR, BW, BY, BZ, CA, CH, CL, CN, CO, CR, CU, CZ, DE, DK, DM, DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KN, KP, KR, KZ, LA, LC, LK, LR, LS, LT, LU, LY, MA, MD, ME, MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM, PE, PG, PH, PL, PT, RO, RS, RU, SC, SD, SE, SG, SK, SL, SM, ST, SV, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, ZA, ZM, ZW				
RW: AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HR, HU, IE, IS, IT, LT, LU, LV, MC, MK, MT, NL, NO, PL, PT, RO, SE, SI, SK, SM, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG, BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				

PRIORITY APPLN. INFO.:

DE 2008-102008049037A 20080925

AB The invention relates to novel polymers comprising one or more recurrent units selected from spirobifluorene, indenofluorene, phenanthrene, dihydrophenanthrene, dihydropyrene, tetrahydropyrene and dihydrobenzooxepine derivs. and having low polydispersity and high mol. weight The invention further relates to a method for production of conjugated or partially conjugated polymers, to blends and formulations comprising the polymers, and to the use of the polymers in electronic and optoelectronic devices, particularly in organic light emitting diodes.

IT 1005004-67-0P 1219172-37-8P

RL: IMF (Industrial manufacture); PRP (Properties); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)

(conjugated polymers with low polydispersity for electronic and optoelectronic applications)

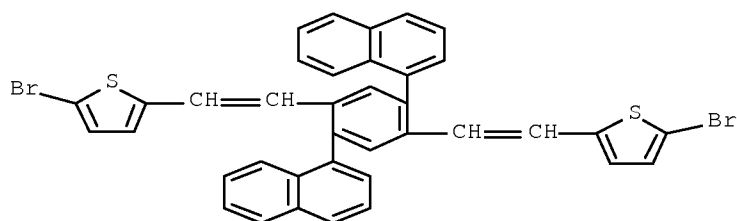
RN 1005004-67-0 CAPLUS

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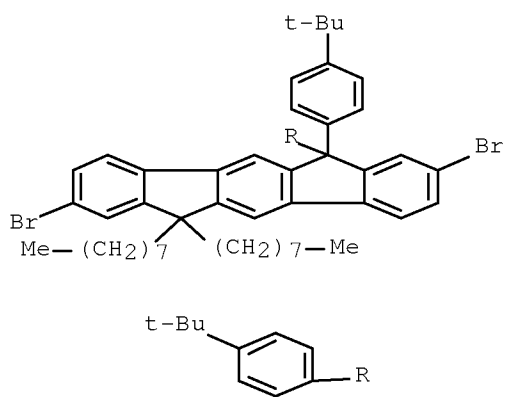
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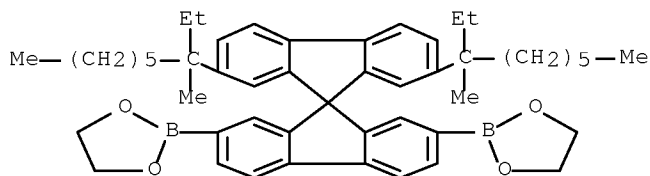
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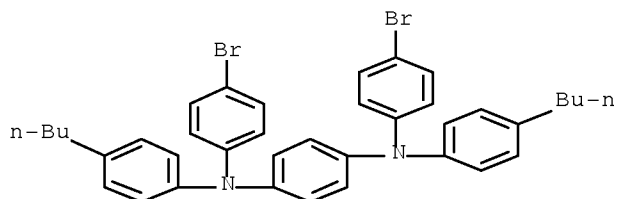
CMF C49 H62 B2 O4



CM 4

CRN 372200-89-0

CMF C38 H38 Br2 N2



RN 1219172-37-8 CAPLUS

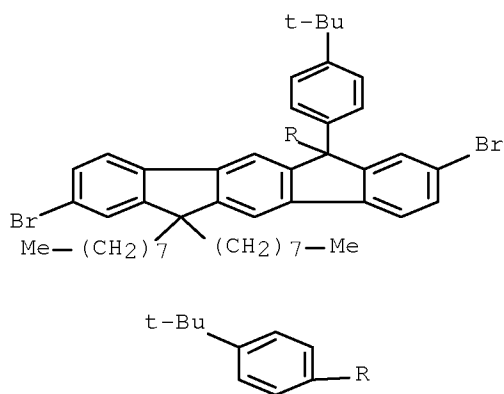
CN 1,4-Benzenediamine, N1,N4-bis(4-bromophenyl)-N1,N4-bis(4-butylphenyl)-, polymer with 2,2'-[2',7'-bis(1-ethyl-1-methylheptyl)-9,9'-spirobi[9H-fluorene]-2,7-diyl]bis[1,3,2-dioxaborolane], 4-bromo-N-[4-[2-(4-bromophenyl)ethenyl]phenyl]-N-[4-(1,1-dimethylethyl)phenyl]benzenamine and

2,8-dibromo-6,6-bis[4-(1,1-dimethylethyl)phenyl]-6,12-dihydro-12,12-dioctylindeno[1,2-b]fluorene (CA INDEX NAME)

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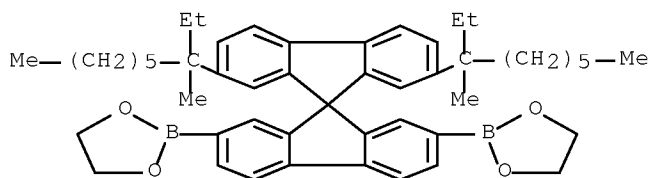
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CRN 1001635-13-7

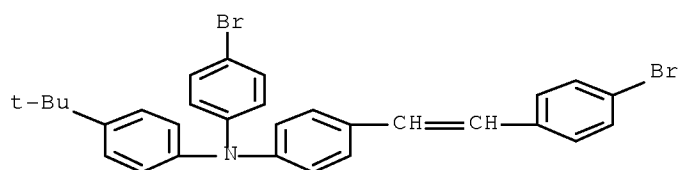
CMF C49 H62 B2 O4



CM 3

CRN 942216-48-0

CMF C30 H27 Br2 N

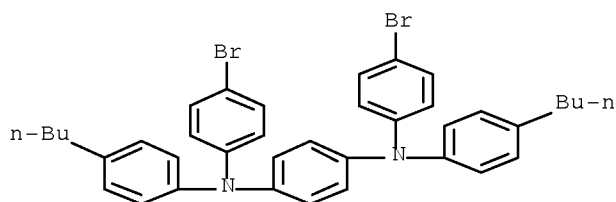




CM 4

CRN 372200-89-0

CMF C38 H38 Br2 N2



REFERENCE COUNT: 3 THERE ARE 3 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L13 ANSWER 2 OF 4 CAPLUS COPYRIGHT 2010 ACS on STN

ACCESSION NUMBER: 2010:405905 CAPLUS Full-text

DOCUMENT NUMBER: 152:406318

TITLE: Conjugated polymers with low polydispersity for electronic and optoelectronic applications

INVENTOR(S): Meyer, Frank Egon; Schulte, Niels; Kreuder, Willi

PATENT ASSIGNEE(S): Merck Patent GmbH, Germany

SOURCE: PCT Int. Appl., 43pp.; Chemical Indexing Equivalent to 152:477664 (DE)  
CODEN: PIXXD2

DOCUMENT TYPE: Patent

LANGUAGE: German

FAMILY ACC. NUM. COUNT: 2

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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WO 2010034393	A1	20100401	WO 2009-EP6355	20090902
W:	AE, AG, AL, AM, AO, AT, AU, AZ, BA, BB, BG, BH, BR, BW, BY, BZ, CA, CH, CL, CN, CO, CR, CU, CZ, DE, DK, DM, DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KN, KP, KR, KZ, LA, LC, LK, LR, LS, LT, LU, LY, MA, MD, ME, MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM, PE, PG, PH, PL, PT, RO, RS, RU, SC, SD, SE, SG, SK, SL, SM, ST, SV, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, ZA, ZM, ZW			
RW:	AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HR, HU, IE, IS, IT, LT, LU, LV, MC, MK, MT, NL, NO, PL, PT, RO, SE, SI, SK, SM, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG, BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM			
DE 102008049037	A1	20100422	DE 2008-102008049037	20080925
PRIORITY APPLN. INFO.:			DE 2008-102008049037A	20080925

AB The invention relates to novel polymers comprising one or more recurrent units selected from spirobifluorene, indenofluorene, phenanthrene, dihydrophenanthrene, dihydropyrene, tetrahydropyrene and dihydrobenzooxepine derivs. and having low polydispersity and high mol. weight The invention

further relates to a method for production of conjugated or partially conjugated polymers, to blends and formulations comprising the polymers, and to the use of the polymers in electronic and optoelectronic devices, particularly in organic light emitting diodes.

IT 1005004-67-0P 1219172-37-8P

RL: IMF (Industrial manufacture); PRP (Properties); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)

(conjugated polymers with low polydispersity for electronic and optoelectronic applications)

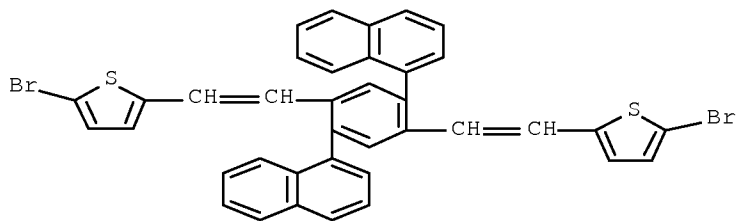
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CM 1

CRN 1005004-64-7

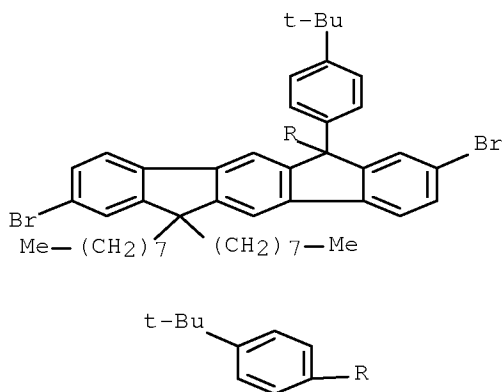
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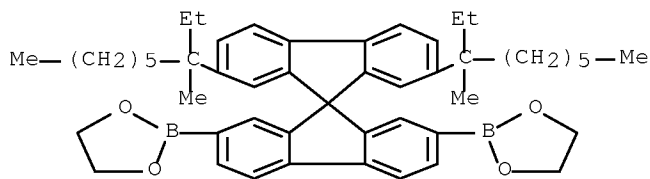
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CRN 1001635-13-7

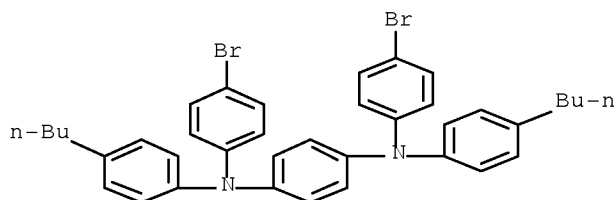
CMF C49 H62 B2 O4



CM 4

CRN 372200-89-0

CMF C38 H38 Br2 N2



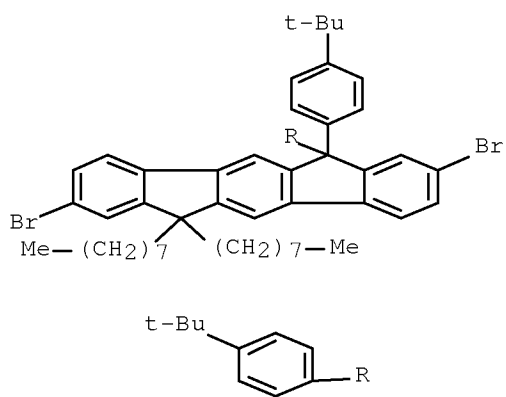
RN 1219172-37-8 CAPLUS

CN 1,4-Benzenediamine, N1,N4-bis(4-bromophenyl)-N1,N4-bis(4-butylphenyl)-, polymer with 2,2'-[2',7'-bis(1-ethyl-1-methylheptyl)-9,9'-spirobi[9H-fluorene]-2,7-diyl]bis[1,3,2-dioxaborolane], 4-bromo-N-[4-[2-(4-bromophenyl)ethenyl]phenyl]-N-[4-(1,1-dimethylethyl)phenyl]benzenamine and 2,8-dibromo-6,6-bis[4-(1,1-dimethylethyl)phenyl]-6,12-dihydro-12,12-dioctylindeno[1,2-b]fluorene (CA INDEX NAME)

CM 1

CRN 1004757-02-1

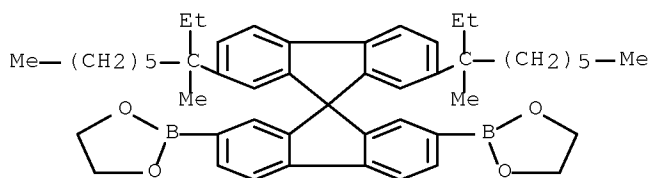
CMF C56 H68 Br2



CM 2

CRN 1001635-13-7

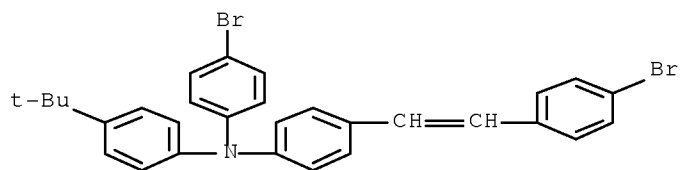
CMF C49 H62 B2 O4



CM 3

CRN 942216-48-0

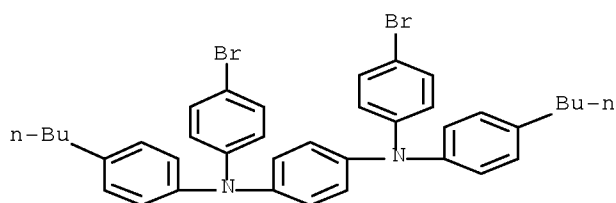
CMF C30 H27 Br2 N



CM 4

CRN 372200-89-0

CMF C38 H38 Br2 N2



REFERENCE COUNT: 2 THERE ARE 2 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L13 ANSWER 3 OF 4 CAPLUS COPYRIGHT 2010 ACS on STN

ACCESSION NUMBER: 2008:219480 CAPLUS Full-text

DOCUMENT NUMBER: 148:263088

TITLE: Conjugated ~~polymers~~ and dendrimers, process for their preparation and their use

INVENTOR(S): Schulte, Niels; Scheurich, Rene Peter; Pan, Junyou

PATENT ASSIGNEE(S): Merck Patent GmbH, Germany

SOURCE: PCT Int. Appl., 47 pp.

CODEN: PIXXD2

DOCUMENT TYPE: Patent

LANGUAGE: German

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2008019744	A1	20080221	WO 2007-EP6383	20070718
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BH, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KN, KP, KR, KZ, LA, LC, LK, LR, LS, LT, LU, LY, MA, MD, ME, MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RS, RU, SC, SD, SE, SG, SK, SL, SM, SV, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, ZA, ZM, ZW				
RW: AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, LV, MC, MT, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG, BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
DE 102006038683	A1	20080221	DE 2006-102006038683	20060817
EP 2052006	A1	20090429	EP 2007-786157	20070718
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JP 2010501030	T	20100114	JP 2009-524088	20070718
CN 101511902	A	20090819	CN 2007-80030404	20090216
US 20100227974	A1	20100909	US 2009-377628	20090216
KR 2009040390	A	20090423	KR 2009-7005422	20090316
PRIORITY APPLN. INFO.:			DE 2006-102006038683A	20060817
			WO 2007-EP6383	W 20070718

ASSIGNMENT HISTORY FOR US PATENT AVAILABLE IN LSUS DISPLAY FORMAT

OTHER SOURCE(S): CASREACT 148:263088

AB The invention relates to conjugated ~~polymers~~ and to dendrimers comprising 9,10-dihydrophenanthrene structural units, to processes for their preparation and to their use in electronic components, especially in ~~polymeric~~ organic

light-emitting diodes, to monomers for their preparation, and to components and light-emitting diodes comprising such polymers and dendrimers. These polymers and dendrimers exhibit improved color stability and lower operating voltage increase so that the life span of the polymer light-emitting diodes are longer.

IT 1006868-15-0P 1006868-16-1P

RL: IMF (Industrial manufacture); PRP (Properties); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)

(conjugated polymers and dendrimers containing dihydrophenanthrene units with good color stability for light-emitting diodes)

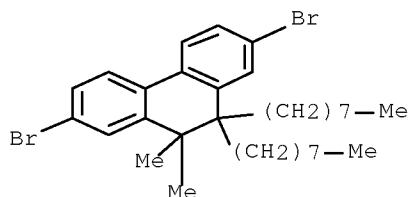
RN 1006868-15-0 CAPLUS

CN 1,4-Benzenediamine, N1,N4-bis(4-bromophenyl)-N1,N4-bis(4-butylphenyl)-, polymer with 2,2'-[2',7'-bis(1-ethyl-1-methylheptyl)-9,9'-spirobi[9H-fluorene]-2,7-diyl]bis[1,3,2-dioxaborolane], 4-bromo-N-[4-[2-(4-bromophenyl)ethenyl]phenyl]-N-[4-(1,1-dimethylethyl)phenyl]benzenamine and 2,7-dibromo-9,10-dihydro-9,9-dimethyl-10,10-dioctylphenanthrene (CA INDEX NAME)

CM 1

CRN 1006868-12-7

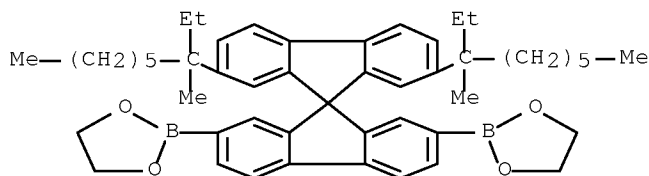
CMF C32 H46 Br2



CM 2

CRN 1001635-13-7

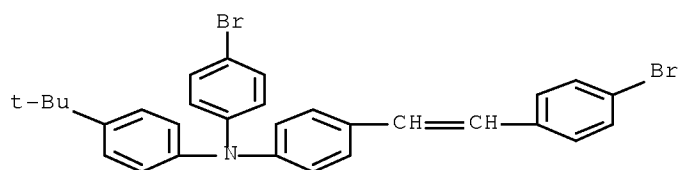
CMF C49 H62 B2 O4



CM 3

CRN 942216-48-0

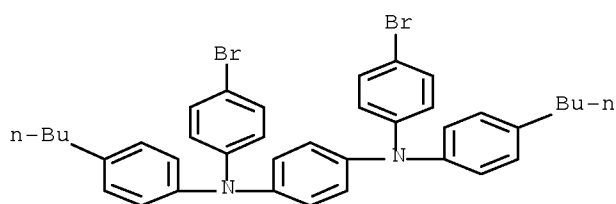
CMF C30 H27 Br2 N



CM 4

CRN 372200-89-0

CMF C38 H38 Br2 N2



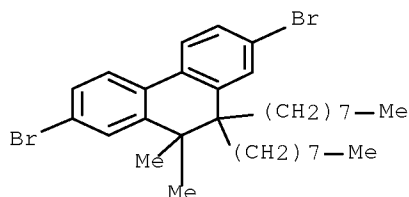
RN 1006868-16-1 CAPLUS

CN 1,4-Benzenediamine, N1,N4-bis(4-bromophenyl)-N1,N4-bis(4-butylphenyl)-, polymer with 2,2'-[2',7'-bis(1-ethyl-1-methylheptyl)-9,9'-spirobi[9H-fluorene]-2,7-diyl]bis[1,3,2-dioxaborolane], 2,7-dibromo-9,10-dihydro-9,9-dimethyl-10,10-dioctylphenanthrene and 2,2'-[(2',5'-dimethyl[1,1'-biphenyl]-2,5-diyl)di-2,1-ethenediyl]bis[5-bromothiophene] (CA INDEX NAME)

CM 1

CRN 1006868-12-7

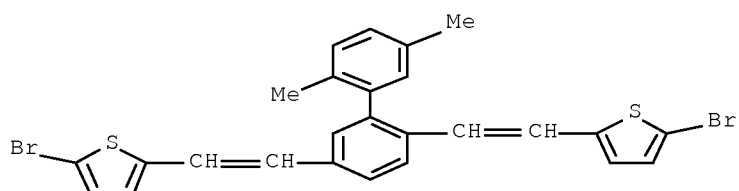
CMF C32 H46 Br2



CM 2

CRN 1004757-06-5

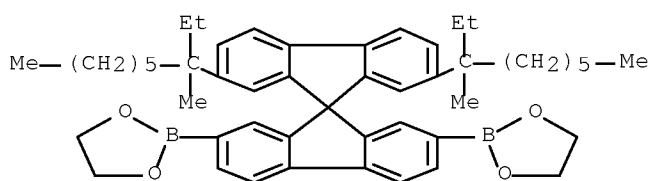
CMF C26 H20 Br2 S2



CM 3

CRN 1001635-13-7

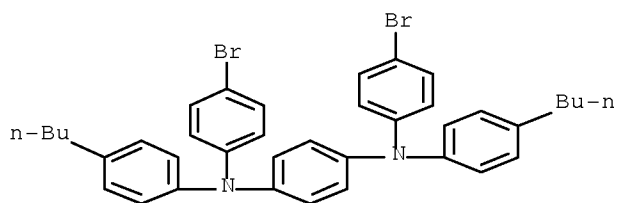
CMF C49 H62 B2 O4



CM 4

CRN 372200-89-0

CMF C38 H38 Br2 N2



REFERENCE COUNT: 10 THERE ARE 10 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

=> d hist

(FILE 'HOME' ENTERED AT 16:47:50 ON 21 DEC 2010)

FILE 'REGISTRY' ENTERED AT 16:48:19 ON 21 DEC 2010

L1 STRUCTURE UPLOADED  
L2 1 S SPIROBIFLUORENE/CN



L3 50 S L1  
L4 1906 S L1 FULL  
L5 0 S L4 AND 9841.1/RID  
L6 0 S L4 AND 9841.1/RID  
L7 0 S INDENOFUORENE/CN  
L8 1 S BENZENE/CN  
L9 1906 S L4 AND 46.150/RID

FILE 'CAPLUS' ENTERED AT 16:55:40 ON 21 DEC 2010

L10 1131 S L9  
L11 495 S L10 AND POLYMER?  
L12 257 S L11 AND ELECTROLUMIN?

FILE 'STNGUIDE' ENTERED AT 17:00:14 ON 21 DEC 2010

FILE 'CAPLUS' ENTERED AT 17:01:26 ON 21 DEC 2010  
L13 4 S L12 AND SPIROBIFLU?

<http://www.cas.org/legal/infopolicy.html>

This file contains CAS Registry Numbers for easy and accurate substance identification.

=> s l12 and ?phenanthran?  
51 ?PHENANTHRAN?  
L14 0 L12 AND ?PHENANTHRAN?

=> s l12 and copolymer?  
828009 COPOLYMER?  
55550 COPOLYMN  
2749 COPOLYMNS  
56585 COPOLYMN  
(COPOLYMN OR COPOLYMNS)  
18203 COPOLYMD  
1 COPOLYMDS  
18204 COPOLYMD  
(COPOLYMD OR COPOLYMDS)  
6144 COPOLYMG  
844468 COPOLYMER?  
(COPOLYMER? OR COPOLYMN OR COPOLYMD OR COPOLYMG)  
L15 74 L12 AND COPOLYMER?

=> s l12 and copolymer and heterocycl?  
760102 COPOLYMER  
222344 COPOLYMERS  
815392 COPOLYMER  
(COPOLYMER OR COPOLYMERS)  
194596 HETEROCYCL?  
L16 20 L12 AND COPOLYMER AND HETEROCYCL?

=> d ibib abs hitstr 19-20

L16 ANSWER 19 OF 20 CAPLUS COPYRIGHT 2010 ACS on STN  
ACCESSION NUMBER: 2003:559879 CAPLUS Full-text  
DOCUMENT NUMBER: 139:124780  
TITLE: ~~Copolymers~~ having aromatic amine repeating  
units, their compositions, and light-emitting diodes  
and devices  
INVENTOR(S): Suzuki, Tomoyuki; Doi, Shuji; Noguchi, Kiminobu

PATENT ASSIGNEE(S): Sumitomo Chemical Co., Ltd., Japan  
 SOURCE: Jpn. Kokai Tokkyo Koho, 16 pp.  
 CODEN: JKXXAF  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Japanese  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
-----	----	-----	-----	-----
JP 2003206335	A	20030722	JP 2002-7167	20020116
JP 4035995	B2	20080123		

PRIORITY APPLN. INFO.: JP 2002-7167 20020116

AB The copolymers have (A)  $\geq 1$  stilbenzyl units Ar1CR1:CR2Ar2 (Ar1, Ar2 = arylene, divalent heterocyclic group; R1, R2 = H, alkyl, alkoxy, alkylthio, alkylsilyl, alkylamino, aryl, aryloxy, arylsilyl, arylamino, arylalkyl, arylalkoxy, arylalkylsilyl, arylalkylamino, arylalkenyl, arylalkynyl, monovalent heterocyclic group, cyano) and (B)  $\geq 1$  aromatic amine units Ar3Ar4NAr5(NAr6Ar7)n (Ar3, Ar5, Ar7 = arylene, divalent heterocyclic group; Ar4, Ar6 = aryl, monovalent heterocyclic group; n = 0-3). The compns. comprise the copolymers and polymers, giving fluorescence at solid states, with polystyrene-based number-average mol. weight 103-108. Light-emitting diodes, surface light sources, displays, and liquid-crystal displays using the copolymers are also claimed. The copolymers show high fluorescent intensity.

IT 565227-14-7P  
 RL: DEV (Device component use); IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses) (copolymers having aromatic amine units with high fluorescent intensity for LED)

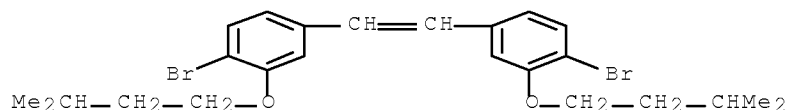
RN 565227-14-7 CAPLUS

CN 1,4-Benzenediamine, N,N'-bis(4-bromophenyl)-N,N'-bis(4-butylphenyl)-, polymer with N,N-bis(4-bromophenyl)-4-[2-[4-(1,1-dimethylethyl)phenyl]ethenyl]benzenamine and 1,1'-(1,2-ethenediyl)bis[4-bromo-3-(3-methylbutoxy)benzene] (9CI) (CA INDEX NAME)

CM 1

CRN 565227-11-4

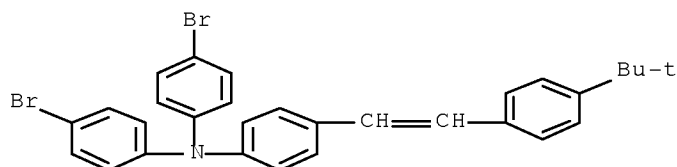
CMF C24 H30 Br2 O2



CM 2

CRN 474787-40-1

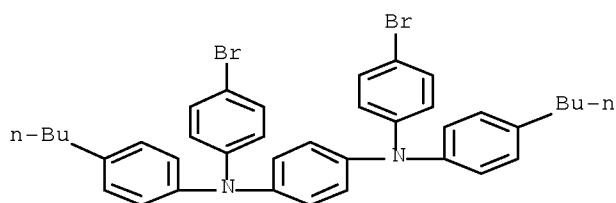
CMF C30 H27 Br2 N



CM 3

CRN 372200-89-0

CMF C38 H38 Br2 N2



OS.CITING REF COUNT: 2 THERE ARE 2 CAPLUS RECORDS THAT CITE THIS RECORD  
(2 CITINGS)

L16 ANSWER 20 OF 20 CAPLUS COPYRIGHT 2010 ACS on STN

ACCESSION NUMBER: 2003:373850 CAPLUS Full-text

DOCUMENT NUMBER: 138:392820

TITLE: Polymer compound and polymer  
light-emitting device using the same

INVENTOR(S): Oguma, Jun; Tsubata, Yoshiaki; Doi, Shuji

PATENT ASSIGNEE(S): Sumitomo Chemical Company, Limited, Japan

SOURCE: Eur. Pat. Appl., 36 pp.

CODEN: EPXXDW

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 1310539	A1	20030514	EP 2002-257717	20021107
EP 1310539	B1	20050316		
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, SK				
TW 249542	B	20060221	TW 2002-132237	20021031
SG 112858	A1	20050728	SG 2002-6657	20021101
US 20030165713	A1	20030904	US 2002-287655	20021105
US 6830832	B2	20041214		
JP 2003226744	A	20030812	JP 2002-322413	20021106
JP 4182245	B2	20081119		
KR 917770	B1	20090921	KR 2002-68357	20021106
JP 2008133298	A	20080612	JP 2008-28695	20080208

PRIORITY APPLN. INFO.:

JP 2001-344482

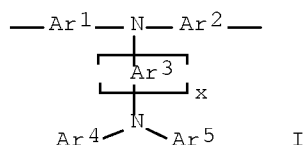
A 20011109

JP 2002-322413

A3 20021106

ASSIGNMENT HISTORY FOR US PATENT AVAILABLE IN LSUS DISPLAY FORMAT

GI



AB A polymer compound having polystyrene reduced number average mol. weight of 103-108, and comprising one or more kinds of repeating units according to -Ar1N[(Ar3)<sub>x</sub>NAr3Ar4]Ar2- (Ar1, Ar2 = arylene group, or divalent heterocyclic compound group; Ar3 = arylene group, arylene vinylene group, or divalent heterocyclic compound group; x = 1-10; wherein when x is ≥2, a plurality of Ar3 may be the same or different; Ar4, Ar5 = aryl group, monovalent heterocyclic compound group, or compound with repeating units of -Ar6- wherein Ar6 = phenylene, stilbene-diyl, distilbene-diyl, fluorene-diyl, divalent condensed polycyclic aromatic, divalent monocyclic hetero-ring, divalent condensed polycyclic hetero ring, or divalent amine compound group). A polymer light-emitting device using the polymer is also described. A display apparatus comprising the polymer light-emitting device is also described. A dot-matrix display apparatus comprising the polymer light-emitting device is also described. A liquid crystal display apparatus comprising the polymer light-emitting device is also described.

IT 525602-22-6P 525602-25-9P

RL: DEV (Device component use); IMF (Industrial manufacture); PRP (Properties); PREP (Preparation); USES (Uses)  
(copolymer compound and polymer light-emitting device using the same)

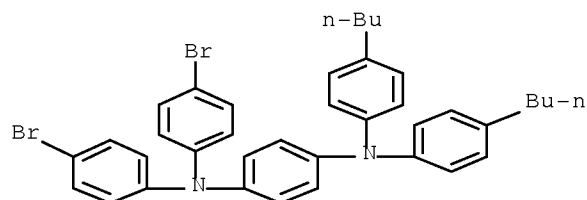
RN 525602-22-6 CAPLUS

CN 1,4-Benzenediamine, N,N-bis(4-bromophenyl)-N',N'-bis(4-butylphenyl)-, polymer with 2,7-dibromo-9,9-dioctyl-9H-fluorene (9CI) (CA INDEX NAME)

CM 1

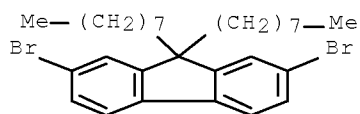
CRN 525602-21-5

CMF C38 H38 Br2 N2



CM 2

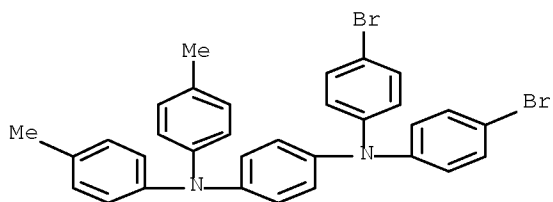
CRN 198964-46-4  
CMF C29 H40 Br2



RN 525602-25-9 CAPLUS  
CN 1,4-Benzenediamine, N,N-bis(4-bromophenyl)-N',N'-bis(4-methylphenyl)-,  
polymer with 2,7-dibromo-9,9-dioctyl-9H-fluorene (9CI) (CA INDEX NAME)

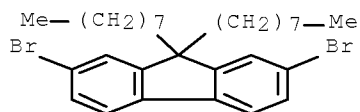
CM 1

CRN 525602-24-8  
CMF C32 H26 Br2 N2

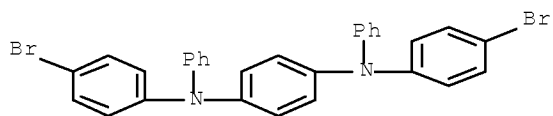


CM 2

CRN 198964-46-4  
CMF C29 H40 Br2

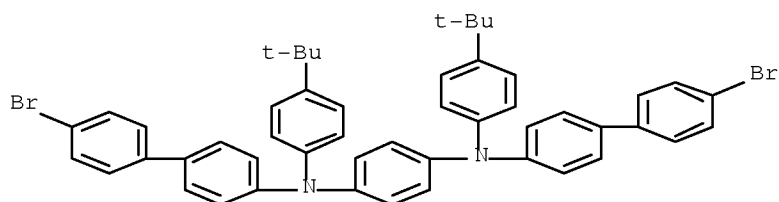


IT 525602-17-9F 525602-20-4F 525602-23-7F  
RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT  
(Reactant or reagent)  
(copolymer compound and polymer light-emitting device  
using the same)  
RN 525602-17-9 CAPLUS  
CN 1,4-Benzenediamine, N1,N4-bis(4-bromophenyl)-N1,N4-diphenyl- (CA INDEX  
NAME)



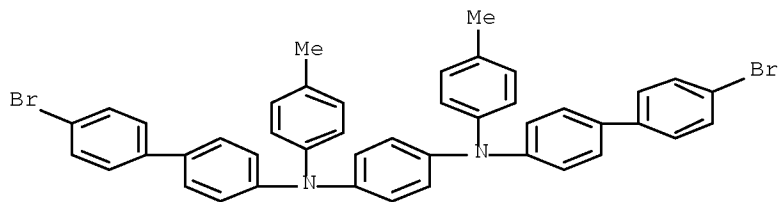
RN 525602-20-4 CAPLUS

CN 1,4-Benzenediamine, N1,N4-bis(4'-bromo[1,1'-biphenyl]-4-yl)-N1,N4-bis[4-(1,1-dimethylethyl)phenyl]- (CA INDEX NAME)



RN 525602-23-7 CAPLUS

CN 1,4-Benzenediamine, N1,N4-bis(4'-bromo[1,1'-biphenyl]-4-yl)-N1,N4-bis(4-methylphenyl)- (CA INDEX NAME)



OS.CITING REF COUNT: 19 THERE ARE 19 CAPLUS RECORDS THAT CITE THIS RECORD (33 CITINGS)

REFERENCE COUNT: 4 THERE ARE 4 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

=> s l12 and copolymer and (heterocycl? monomer?)  
 760102 COPOLYMER  
 222344 COPOLYMERS  
 815392 COPOLYMER  
 (COPOLYMER OR COPOLYMERS)  
 194596 HETEROCYCL?  
 430059 MONOMER?  
 313 HETEROCYCL? MONOMER?  
 (HETEROCYCL?(W)MONOMER?)  
 L17 0 L12 AND COPOLYMER AND (HETEROCYCL? MONOMER?)

=> s l12 and (heterocycl? monomer?)  
 194596 HETEROCYCL?

430059 MONOMER?  
313 HETEROCYCL? MONOMER?  
(HETEROCYCL?(W)MONOMER?)  
L18 0 L12 AND (HETEROCYCL? MONOMER?)

=> s l12 and (aromatic monomer?)  
270469 AROMATIC  
10451 AROMATICS  
275303 AROMATIC  
(AROMATIC OR AROMATICS)  
402399 AROM  
19287 AROMS  
412618 AROM  
(AROM OR AROMS)  
546778 AROMATIC  
(AROMATIC OR AROM)  
430059 MONOMER?  
2144 AROMATIC MONOMER?  
(AROMATIC(W)MONOMER?)  
L19 2 L12 AND (AROMATIC MONOMER?)

=> d ibib abs hitstr 1-2

L19 ANSWER 1 OF 2 CAPLUS COPYRIGHT 2010 ACS on STN  
ACCESSION NUMBER: 2005:122651 CAPLUS Full-text  
DOCUMENT NUMBER: 142:228438  
TITLE: Aromatic monomer-metal complexes  
and electroluminescent conjugated  
polymers formed from them and electronic  
devices using the polymers  
INVENTOR(S): Yu, Wanglin; O'Brien, James J.  
PATENT ASSIGNEE(S): Sumitomo Chemical Company, Limited, Japan  
SOURCE: U.S. Pat. Appl. Publ., 8 pp.  
CODEN: USXXCO  
DOCUMENT TYPE: Patent  
LANGUAGE: English  
FAMILY ACC. NUM. COUNT: 1  
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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US 20050031900	A1	20050210	US 2004-893182	20040716
US 7705528	B2	20100427		
WO 2005016945	A1	20050224	WO 2004-US23123	20040716
W:	AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW			
RW:	BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG			
GB 2421242	A	20060621	GB 2006-2029	20040716
GB 2421242	B	20080102		
CN 1829725	A	20060906	CN 2004-80021671	20040716
DE 112004001446	T5	20061102	DE 2004-112004001446	20040716
JP 2007501230	T	20070125	JP 2006-522581	20040716

US 20100160631 A1 20100624 US 2010-718238 20100305  
PRIORITY APPLN. INFO.: US 2003-492434P P 20030804  
US 2004-893182 A3 20040716  
WO 2004-US23123 W 20040716

ASSIGNMENT HISTORY FOR US PATENT AVAILABLE IN LSUS DISPLAY FORMAT

OTHER SOURCE(S): MARPAT 142:228438

AB Halogenated aromatic monomer-metal complexes are described which comprise a metal selected from Ir, Rh, and Os bound to a ligand and to 2 linked aromatic moieties,  $\geq 1$  of which is heteroarom., which are bound in turn to substituents that include  $\geq 1$  halogenated aromatic monomer fragment and a linking group that disrupts conjugation between the aromatic monomer fragment and the metal complex fragment. Electroluminescent polymers having conjugated backbones that include structural units of the aromatic monomer metal complexes and of  $\geq 1$  aromatic comonomer are also described. Disruption of conjugation is done to preserve the phosphorescent emission properties of the metal complex in the polymers formed from the aromatic monomer-metal complexes. Electronic devices incorporating the polymers are also described.

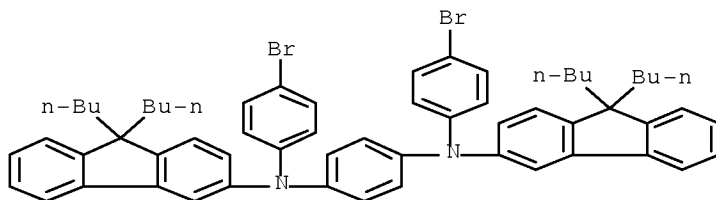
IT 842121-95-3DP, polymers with metal complexes and aromatic compds.

RL: DEV (Device component use); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)

(aromatic monomer-metal complexes with conjugation-disrupting linking groups and electroluminescent polymers incorporating them and electronic devices using the polymers)

RN 842121-95-3 CAPLUS

CN 1,4-Benzenediamine, N1,N4-bis(4-bromophenyl)-N1,N4-bis(9,9-dibutyl-9H-fluoren-3-yl)- (CA INDEX NAME)



OS.CITING REF COUNT: 2 THERE ARE 2 CAPLUS RECORDS THAT CITE THIS RECORD  
(4 CITINGS)

L19 ANSWER 2 OF 2 CAPLUS COPYRIGHT 2010 ACS on STN

ACCESSION NUMBER: 2003:450802 CAPLUS Full-text

DOCUMENT NUMBER: 139:36984

TITLE: Fluorescent polymer, their preparation and polymer light-emitting device

INVENTOR(S): Kobayashi, Satoshi; Noguchi, Takanobu; Tsubata, Yoshiaki; Kitano, Makoto; Doi, Shuji; Ueoka, Takahiro; Nakazono, Akiko

PATENT ASSIGNEE(S): Sumitomo Chemical Company, Limited, Japan

SOURCE: Eur. Pat. Appl., 58 pp.

CODEN: EPXXDW

DOCUMENT TYPE: Patent

LANGUAGE: English

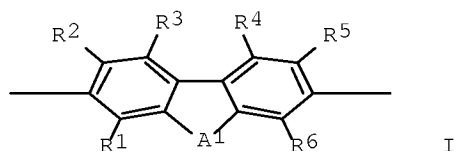
FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:



PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 1318163	A1	20030611	EP 2002-258395	20021205
EP 1318163	B1	20100127		
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, SK				
SG 124249	A1	20060830	SG 2002-7169	20021127
JP 2003231741	A	20030819	JP 2002-347573	20021129
JP 4192578	B2	20081210		
TW 268941	B	20061221	TW 2002-134721	20021129
US 20030168656	A1	20030911	US 2002-309101	20021204
EP 2067807	A1	20090610	EP 2009-4354	20021205
R: DE, FR, GB, NL				
EP 2067808	A1	20090610	EP 2009-4355	20021205
R: AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, IE, IT, LI, LU, MC, NL, PT, SE, SI, SK, TR, AL, LT, LV, MK, RO				
US 20050042195	A1	20050224	US 2004-954223	20041001
US 7662478	B2	20100216		
US 20080103278	A1	20080501	US 2007-955788	20071213
JP 2008179821	A	20080807	JP 2008-17653	20080129
JP 2009001804	A	20090108	JP 2008-174340	20080703
KR 2010065249	A	20100616	KR 2010-36721	20100421
PRIORITY APPLN. INFO.:			JP 2001-373924	A 20011207
			JP 2002-347573	A3 20021129
			KR 2002-76547	A3 20021204
			US 2002-309101	B1 20021204
			EP 2002-258395	A3 20021205
			US 2004-954223	A1 20041001

ASSIGNMENT HISTORY FOR US PATENT AVAILABLE IN LSUS DISPLAY FORMAT  
GI



AB A polymer of Mn 103-108 comprises a repeating unit I, where A1 = divalent group in which the bond distance ratio (bond distance of C( $\alpha$ )-A1 / bond distance of C( $\alpha$ )-C( $\beta$ )) is  $\geq 1.10$ ; R1-6 = H, alkyl, alkyloxy, aryloxy, arylalkyloxy; R2 and R3 or R4 and R5 may be connected to form a ring. The polymer is useful as a light-emitting material, a charge transporting material, etc.

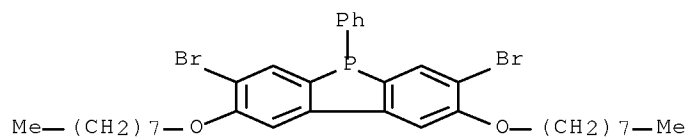
IT ~~540536-18-3P~~ 540536-20-7P 540536-22-9P  
540536-23-0P 540536-24-1P

RL: IMF (Industrial manufacture); PREP (Preparation)  
(preparation and fluorescence)

RN 540536-18-3 CAPLUS

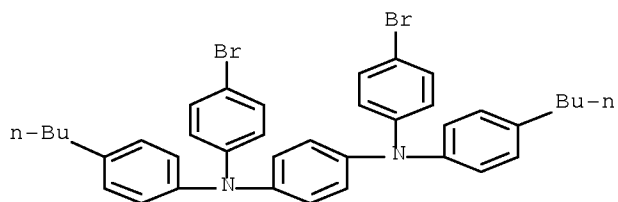
CN 1,4-Benzenediamine, N,N'-bis(4-bromophenyl)-N,N'-bis(4-butylphenyl)-, polymer with 3,7-dibromo-2,8-bis(octyloxy)-5-phenyl-5H-benzo[b]phosphindole (9CI) (CA INDEX NAME)

CRN 540536-07-0  
CMF C34 H43 Br2 O2 P



CM 2

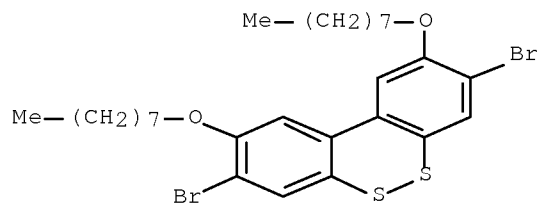
CRN 372200-89-0  
CMF C38 H38 Br2 N2



RN 540536-20-7 CAPLUS  
CN 1,4-Benzenediamine, N,N'-bis(4-bromophenyl)-N,N'-bis(4-butylphenyl)-,  
polymer with 3,8-dibromo-2,9-bis(octyloxy)dibenzo[c,e][1,2]dithiin (9CI)  
(CA INDEX NAME)

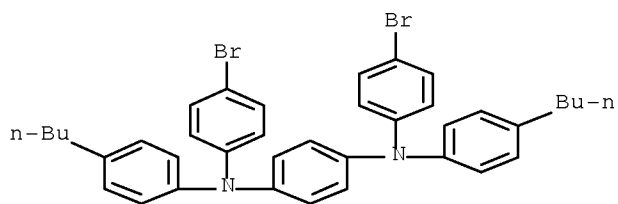
CM 1

CRN 540536-09-2  
CMF C28 H38 Br2 O2 S2



CM 2

CRN 372200-89-0  
CMF C38 H38 Br2 N2



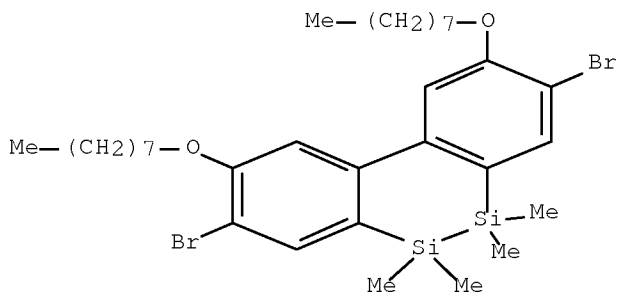
RN 540536-22-9 CAPLUS

CN 1,4-Benzenediamine, N,N'-bis(4-bromophenyl)-N,N'-bis(4-butylphenyl)-,  
polymer with 2,7-dibromo-9,10-dihydro-9,9,10,10-tetramethyl-3,6-  
bis(octyloxy)-9,10-disilaphenanthrene (9CI) (CA INDEX NAME)

CM 1

CRN 540536-10-5

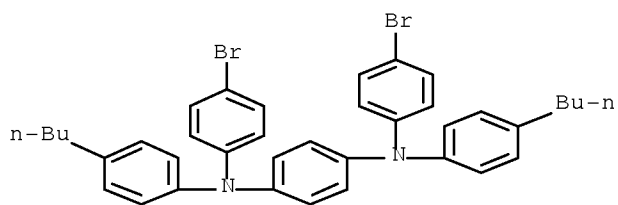
CMF C32 H50 Br2 O2 Si2



CM 2

CRN 372200-89-0

CMF C38 H38 Br2 N2



RN 540536-23-0 CAPLUS

CN 1,4-Benzenediamine, N,N'-bis(4-bromophenyl)-N,N'-bis(4-butylphenyl)-,

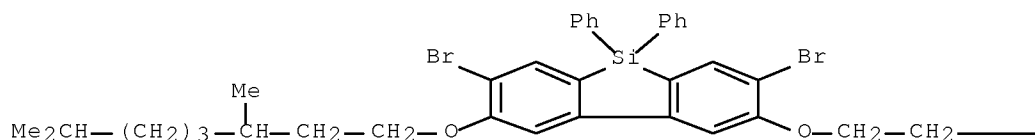
polymer with 2,7-dibromo-3,6-bis[(3,7-dimethyloctyl)oxy]-9,9-diphenyl-9H-9-silafluorene (9CI) (CA INDEX NAME)

CM 1

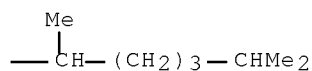
CRN 540536-14-9

CMF C44 H56 Br2 O2 Si

PAGE 1-A



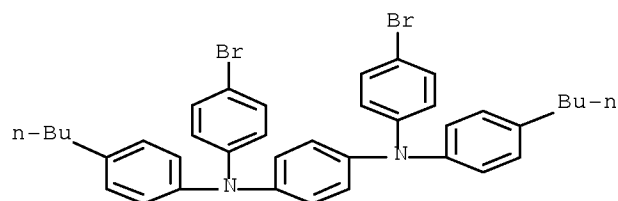
PAGE 1-B



CM 2

CRN 372200-89-0

CMF C38 H38 Br2 N2



RN 540536-24-1 CAPLUS

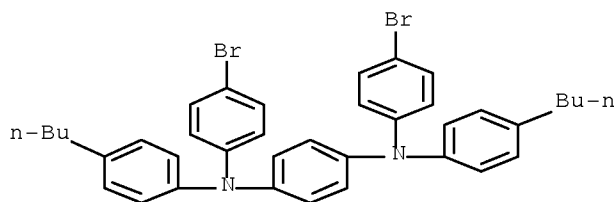
CN 1,4-Benzenediamine, N,N'-bis(4-bromophenyl)-N,N'-bis(4-butylphenyl)-, polymer with 2,7-dichloro-3,6-bis[(3,7-dimethyloctyl)oxy]-9,9-diphenyl-9H-9-silafluorene (9CI) (CA INDEX NAME)

CM 1

CRN 540536-16-1

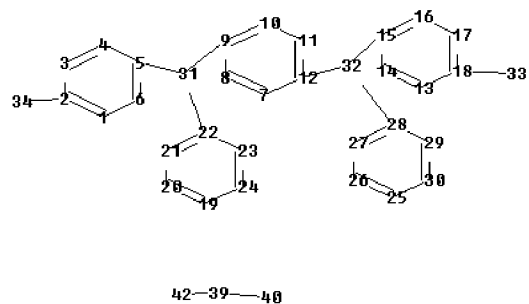
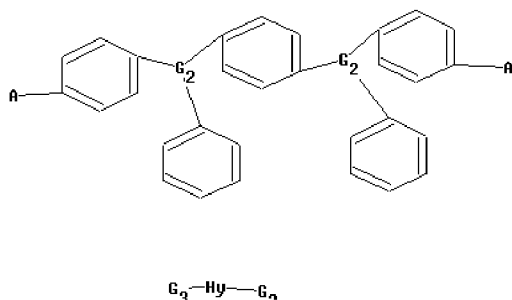
CMF C44 H56 Cl2 O2 Si

CRN 372200-89-0  
CMF C38 H38 Br2 N2



OS.CITING REF COUNT:	11	THERE ARE 11 CAPLUS RECORDS THAT CITE THIS RECORD (15 CITINGS)
REFERENCE COUNT:	8	THERE ARE 8 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

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chain nodes :
31 32 33 34 39 40 42
ring nodes :
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23
24 25 26 27 28 29 30
chain bonds :
2-34 5-31 9-31 12-32 15-32 18-33 22-31 28-32 39-40 39-42
ring bonds :
1-2 1-6 2-3 3-4 4-5 5-6 7-8 7-12 8-9 9-10 10-11 11-12 13-14 13-18 14-
15
15-16 16-17 17-18 19-20 19-24 20-21 21-22 22-23 23-24 25-26 25-30 26-27
27-28 28-29
29-30
exact/norm bonds :
2-34 5-31 9-31 12-32 15-32 18-33 22-31 28-32 39-40 39-42
normalized bonds :
1-2 1-6 2-3 3-4 4-5 5-6 7-8 7-12 8-9 9-10 10-11 11-12 13-14 13-18 14-
15
15-16 16-17 17-18 19-20 19-24 20-21 21-22 22-23 23-24 25-26 25-30 26-27
27-28 28-29
29-30
isolated ring systems :
containing 1 : 7 : 13 : 19 : 25 :

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G1: Ak, H

G2: N, P

G3: B, X

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Match level :
1:Atom 2:Atom 3:Atom 4:Atom 5:Atom 6:Atom 7:Atom 8:Atom 9:Atom 10:Atom
11:Atom 12:Atom 13:Atom 14:Atom 15:Atom 16:Atom 17:Atom 18:Atom 19:Atom
20:Atom 21:Atom
22:Atom 23:Atom 24:Atom 25:Atom 26:Atom 27:Atom 28:Atom 29:Atom 30:Atom
31:CLASS 32:CLASS
33:CLASS 34:CLASS 39:Atom 40:CLASS 42:CLASS
Generic attributes :
39:
Saturation : Unsaturated

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L1 STRUCTURE UPLOADED

=> d l1

L1 HAS NO ANSWERS

L1 STR

\* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT \*

Structure attributes must be viewed using STN Express query preparation.

=> s l1

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SAMPLE SCREEN SEARCH COMPLETED - 11282 TO ITERATE

100.0% PROCESSED 11282 ITERATIONS 0 ANSWERS  
SEARCH TIME: 00.00.01

FULL FILE PROJECTIONS: ONLINE \*\*COMPLETE\*\*  
BATCH \*\*COMPLETE\*\*  
PROJECTED ITERATIONS: 219273 TO 232007  
PROJECTED ANSWERS: 0 TO 0

L2 0 SEA SSS SAM L1

=> s l1 full  
FULL SEARCH INITIATED 18:40:50 FILE 'REGISTRY'  
FULL SCREEN SEARCH COMPLETED - 227628 TO ITERATE

100.0% PROCESSED 227628 ITERATIONS 15 ANSWERS  
SEARCH TIME: 00.00.01

L3 15 SEA SSS FUL L1

This file contains CAS Registry Numbers for easy and accurate  
substance identification.

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L4 11 L3

=> d ibib abs hitstr 6-11

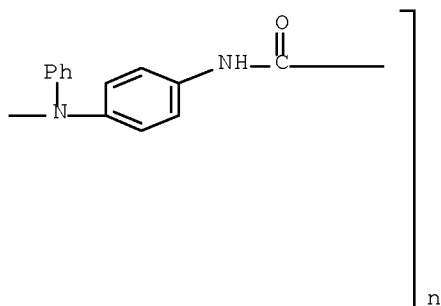
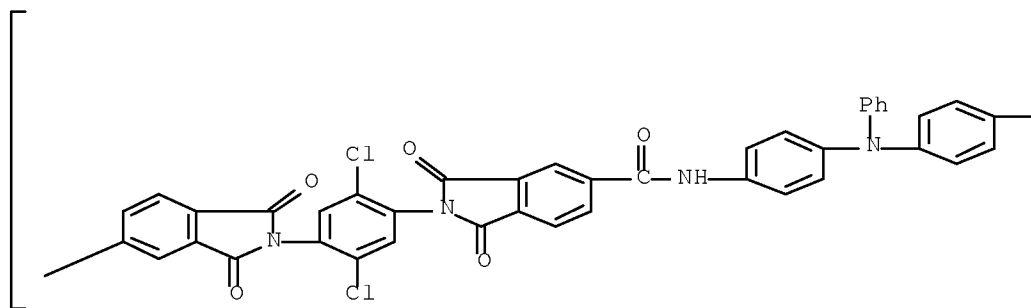
L4 ANSWER 6 OF 11 CAPLUS COPYRIGHT 2010 ACS on STN  
ACCESSION NUMBER: 2003:338216 CAPLUS Full-text  
DOCUMENT NUMBER: 139:180435  
TITLE: A novel class of organosoluble and strictly  
alternating poly(amine-amide-imide)s containing  
triphenylamine units in the main chain  
AUTHOR(S): Liou, Guey-Sheng; Hsiao, Sheng-Huei  
CORPORATE SOURCE: Department of Applied Chemistry, National Chi Nan  
University, Nantou Hsien, 545, Taiwan  
SOURCE: Polymer Journal (Tokyo, Japan) (2003), 35(4), 402-406  
CODEN: POLJB8; ISSN: 0032-3896  
PUBLISHER: Society of Polymer Science, Japan  
DOCUMENT TYPE: Journal  
LANGUAGE: English

AB A series of triphenylamine-containing aromatic polyamine-polyamide-polyimides  
are synthesized by the direct phosphorylation polycondensation of N,N'-bis(4-  
aminophenyl)-N,N'-diphenyl-1,4-phenylenediamine and various imide ring-  
containing dicarboxylic acids. The polymers are amorphous and exhibit good  
solubility in polar aprotic solvents, thin-film forming ability, thermal  
stability, and mech. properties.

IT ~~577746-63-5P~~  
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)  
(soluble and strictly alternating polyamine-polyamide-polyimides containing  
triphenylamine units in main chain)

RN 577746-63-5 CAPLUS

CN Poly[(1,3-dihydro-1,3-dioxo-2H-isoindole-5,2-diyl)(2,5-dichloro-1,4-  
phenylene)(1,3-dihydro-1,3-dioxo-2H-isoindole-2,5-diyl)carbonylimino-1,4-  
phenylene(phenylimino)-1,4-phenylene(phenylimino)-1,4-  
phenyleneiminocarbonyl] (9CI) (CA INDEX NAME)

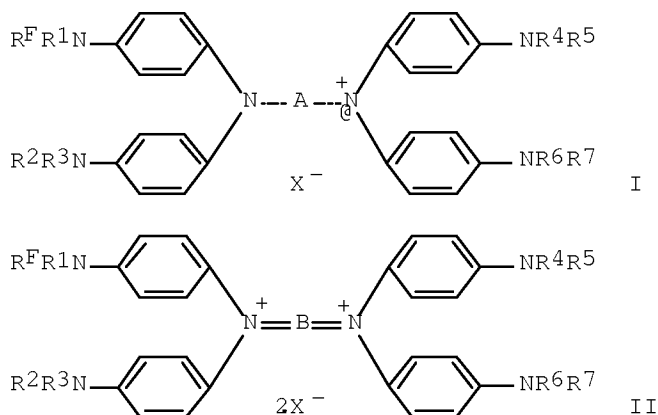


OS.CITING REF COUNT: 4 THERE ARE 4 CAPLUS RECORDS THAT CITE THIS RECORD  
(4 CITINGS)  
REFERENCE COUNT: 27 THERE ARE 27 CITED REFERENCES AVAILABLE FOR THIS  
RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L4 ANSWER 7 OF 11 CAPLUS COPYRIGHT 2010 ACS on STN  
ACCESSION NUMBER: 1995:494414 CAPLUS Full-text  
DOCUMENT NUMBER: 122:252219  
ORIGINAL REFERENCE NO.: 122:45797a,45800a  
TITLE: IR-absorbing compounds and optical recording medium  
using same  
INVENTOR(S): Mihara, Cheko; Santo, Takeshi; Sugata, Hiroyuki  
PATENT ASSIGNEE(S): Canon Kk, Japan  
SOURCE: Jpn. Kokai Tokkyo Koho, 36 pp.  
CODEN: JKXXAF  
DOCUMENT TYPE: Patent  
LANGUAGE: Japanese  
FAMILY ACC. NUM. COUNT: 1  
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
-----	----	-----	-----	-----
JP 06220420	A	19940809	JP 1993-24969	19930121
JP 3199139	B2	20010813		





AB The title compds. are I or II [ A = (p-phenylene)<sub>n</sub>, 1,4-naphthylene, 1,5-naphthylene, m-phenylene; B = (p-cyclohexadienylylidene)<sub>n</sub>, 1,4-naphthalenediylidene, 1,5-naphthalenediylidene; X<sup>-</sup> = metal complex anion; RF = F-containing monovalent organic residual group; R<sub>1</sub>-7 = RF, H, monovalent organic residual group ]. The title medium comprises an organic dye thin film containing the above compds. The medium showed light-resistant characteristics.

IT 162315-56-2

RL: DEV (Device component use); MOA (Modifier or additive use); USES (Uses)

(IR-absorbing compds. and optical recording medium using same)

RN 162315-56-2 CAPLUS

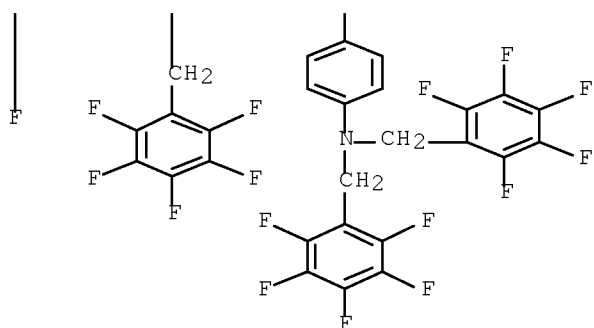
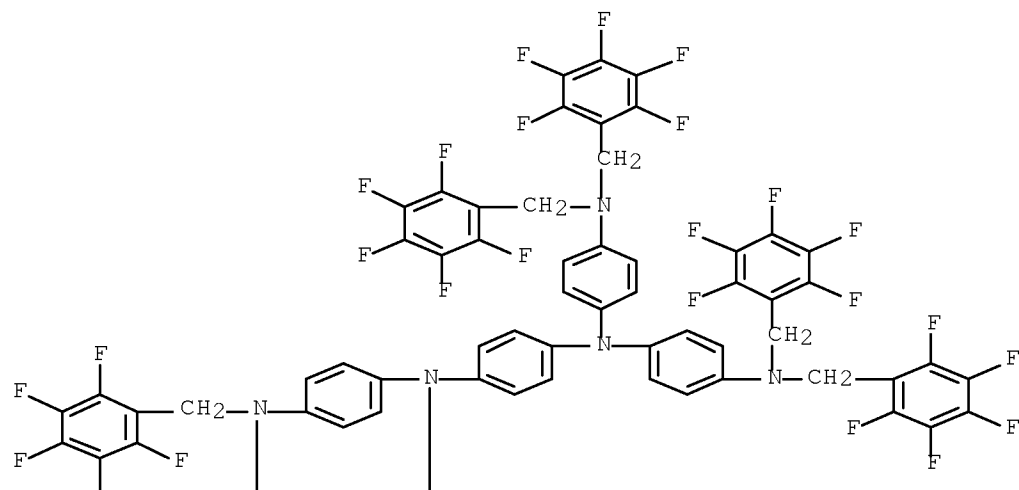
CN Cuprate(1-), bis[3,4,6-trichloro-1,2-benzenedithiolato(2-)-S,S']-, salt with N,N,N',N'-tetrakis[4-[bis[(pentafluorophenyl)methyl]amino]phenyl]-1,4-benzenediamine (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 159252-86-5

CMF C86 H36 F40 N6

CCI RIS

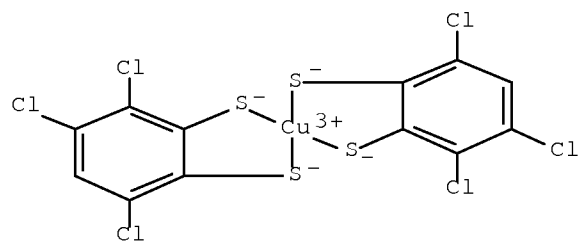


CM 2

CRN 143227-43-4

CMF C12 H2 C16 Cu S4

CCI CCS



OS.CITING REF COUNT: 1 THERE ARE 1 CAPLUS RECORDS THAT CITE THIS RECORD  
(1 CITINGS)

L4 ANSWER 8 OF 11 CAPLUS COPYRIGHT 2010 ACS on STN

ACCESSION NUMBER: 1994:712146 CAPLUS Full-text

DOCUMENT NUMBER: 121:312146

ORIGINAL REFERENCE NO.: 121:56937a,56940a

TITLE: IR-absorbing compound and optical recording medium  
using same

INVENTOR(S): Mihara, Cheko; Tamura, Miki; Santo, Takeshi; Sugata,  
Hiroyuki

PATENT ASSIGNEE(S): Canon Kk, Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 109 pp.

CODEN: JKXXAF

DOCUMENT TYPE: Patent

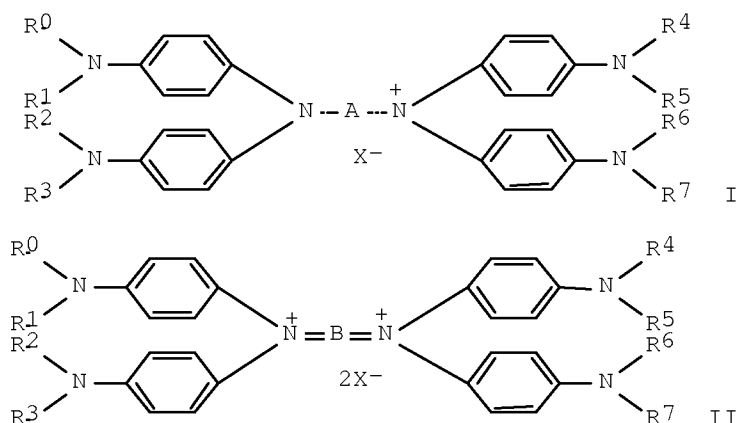
LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
-----	----	-----	-----	-----
JP 06024146	A	19940201	JP 1993-110576	19930512
PRIORITY APPLN. INFO.:			JP 1992-145046	A1 19920512

GI



AB The title compound has a formula I or II (R0-7= H, monovalent organic residue while at least 1 of them contains F; or at least 1 group of R0 and R1, R2 and R3, R4 and R5 and R6 and R7 being atoms required to form a F-containing 5-7-membered ring with N while others being H, monovalent organic residue; A, B = specified aromatic group; X = anion). The recording medium contains the above compound in its recording layer. The compound shows good solubility and heat resistance to give recording medium with superior light and heat-resistance.

IT 159252-87-6

RL: USES (Uses)

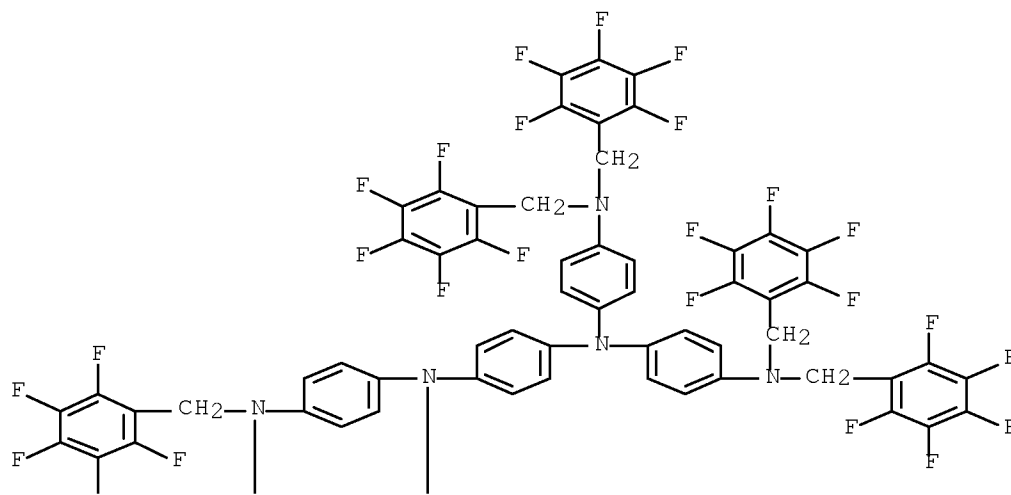
(IR-absorbent, optical recording medium using)

RN 159252-87-6 CAPLUS  
 CN Arsenate(1-), hexafluoro-, salt with  
 N,N,N',N'-tetrakis[4-[bis[(pentafluorophenyl)methyl]amino]phenyl]-1,4-  
 benzenediamine (1:1) (9CI) (CA INDEX NAME)

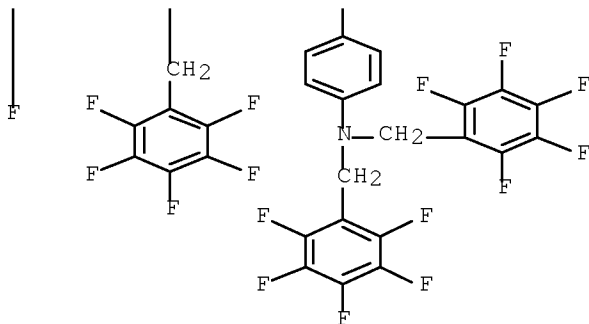
CM 1

CRN 159252-86-5  
 CMF C86 H36 F40 N6  
 CCI RIS

PAGE 1-A

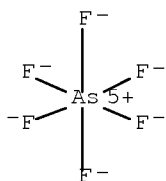


PAGE 2-A



CM 2

CRN 16973-45-8  
 CMF As F6  
 CCI CCS



OS.CITING REF COUNT: 2 THERE ARE 2 CAPLUS RECORDS THAT CITE THIS RECORD  
(2 CITINGS)

L4 ANSWER 9 OF 11 CAPLUS COPYRIGHT 2010 ACS on STN  
 ACCESSION NUMBER: 1987:205158 CAPLUS Full-text  
 DOCUMENT NUMBER: 106:205158  
 ORIGINAL REFERENCE NO.: 106:33113a,33116a  
 TITLE: Electrophotographic photoreceptor containing  
 charge-generating tetrakisazo compounds  
 INVENTOR(S): Umehara, Masashige; Matsumoto, Masakazu; Takiguchi,  
 Takao; Yamashita, Masataka; Ishikawa, Shozo  
 PATENT ASSIGNEE(S): Canon K. K., Japan  
 SOURCE: Jpn. Kokai Tokkyo Koho, 41 pp.  
 CODEN: JKXXAF  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Japanese  
 FAMILY ACC. NUM. COUNT: 6  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 61240246	A	19861025	JP 1985-80248	19850417
JP 04002948	B	19920121		
US 4666810	A	19870519	US 1986-852243	19860415
PRIORITY APPLN. INFO.:			JP 1985-80248	A 19850417
			JP 1985-157699	A 19850717
			JP 1985-157700	A 19850717
			JP 1985-159401	A 19850718
			JP 1985-159402	A 19850718
			JP 1985-159403	A 19850718

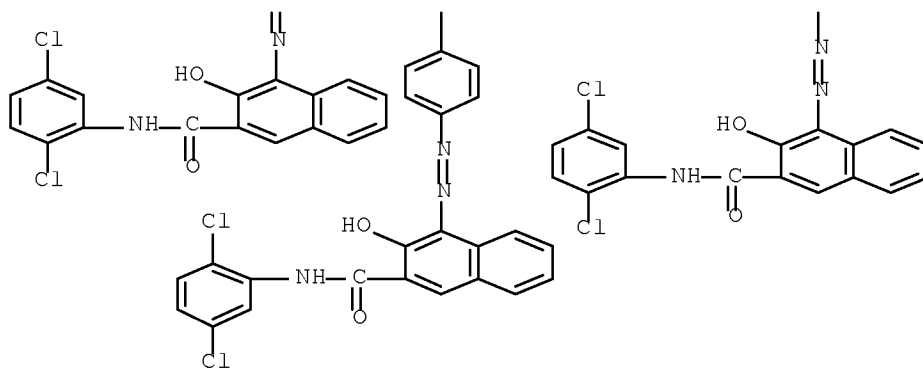
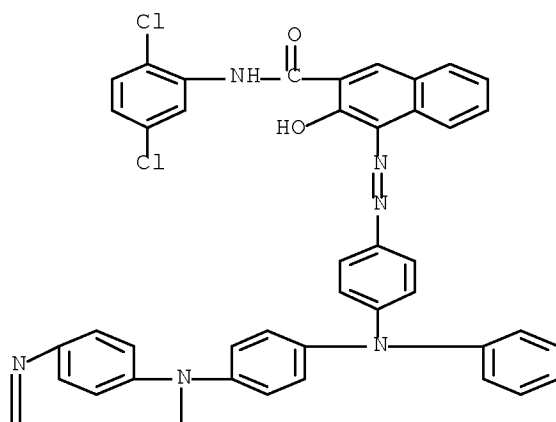
ASSIGNMENT HISTORY FOR US PATENT AVAILABLE IN LSUS DISPLAY FORMAT

AB The tetrakisazo compound has the formula  
 (AN:NZ2)(AN:NZ3)NZ1N(Z4N:NA)(Z5N:NA)(I; A = coupler residue with a phenolic OH  
 group; Z1-Z5 = arylene). An electrophotog. composite photoconductor may be  
 prepared by dispersing a tetrakisazo compound of the formula I (A = naphthol  
 AS coupler residue; Z1-Z5 = 1, 4-phenylene) in a poly(vinyl butyral) binder to  
 form a charge-generating layer and dispersing a hydrazone compound in a PMMA  
 binder to give a charge-transport layer. The photoreceptor shows improved  
 sensitivity and durability.

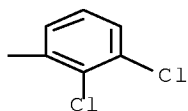
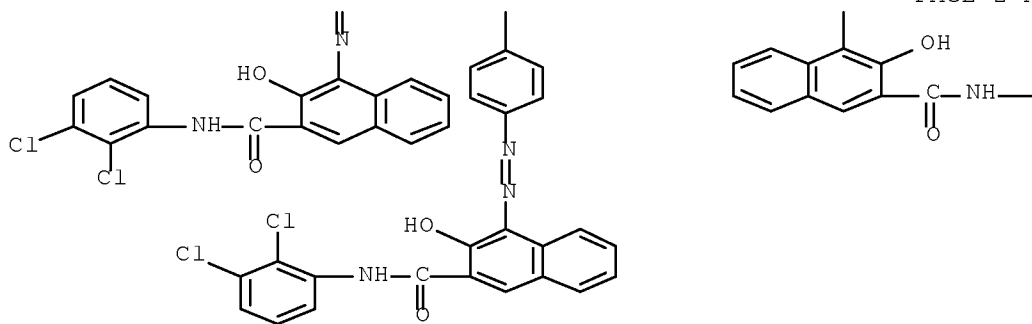
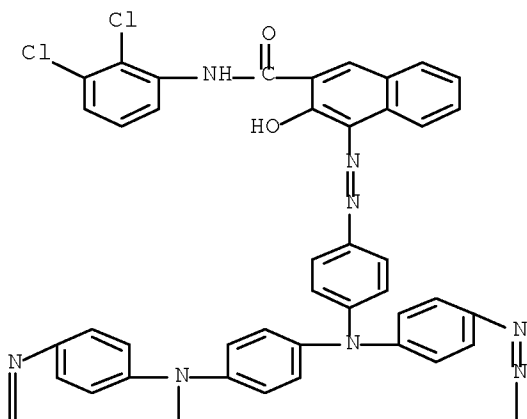
IT 108305-12-0 108305-17-5  
 RL: USES (Uses)  
 (electrophotog. photoreceptor containing charge-generating agent from, with  
 improved sensitivity)

RN 108305-12-0 CAPLUS

CN 2-Naphthalenecarboxamide, 4,4',4'',4'''-[1,4-phenylenebis[nitrilobis(4,1-  
 phenyleneazo)]]tetrakis[N-(2,5-dichlorophenyl)-3-hydroxy- (9CI) (CA INDEX  
 NAME)



RN 108305-17-5 CAPLUS  
 CN 2-Naphthalenecarboxamide, 4,4',4'',4'''-[1,4-phenylenebis[nitrilobis(4,1-phenyleneazo)]]tetrakis[N-(2,3-dichlorophenyl)-3-hydroxy- (9CI) (CA INDEX NAME)



OS.CITING REF COUNT: 5 THERE ARE 5 CAPLUS RECORDS THAT CITE THIS RECORD  
(5 CITINGS)

L4 ANSWER 10 OF 11 CAPLUS COPYRIGHT 2010 ACS on STN

ACCESSION NUMBER: 1977:73159 CAPLUS Full-text

DOCUMENT NUMBER: 86:73159

ORIGINAL REFERENCE NO.: 86:11613a,11616a

TITLE: Preparation of poly (N-phenyliminoperfluorophenylene).

Solvent effects on reactions between anilides and hexafluorobenzene

AUTHOR(S): Koppang, Rolf  
CORPORATE SOURCE: Dep. Dent. Technol., Univ. Oslo, Oslo, Norway  
SOURCE: Journal of Fluorine Chemistry (1976), 8(5), 389-400  
CODEN: JFLCAR; ISSN: 0022-1139

DOCUMENT TYPE: Journal  
LANGUAGE: English

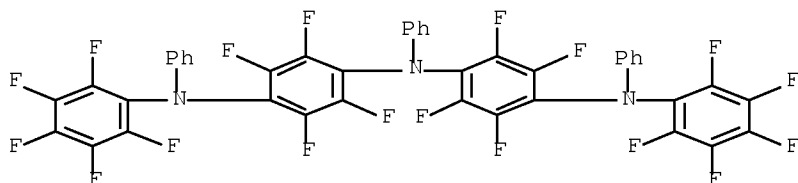
AB The reactions between anilides and hexafluorobenzene [392-56-3] were accelerated in the presence of dipolar aprotic solvents, and the yield of poly(N-phenyliminoperfluorophenylene) [61552-67-8], prepared from 2,3,4,5,6-pentafluoro-N-lithiophenylanilide [61553-15-9] and hexafluorobenzene, reflects this solvent effect. The structure and some thermal properties of the insol. polymer are discussed.

IT ~~4630-23-3P~~ 61555-69-9P

RL: SPN (Synthetic preparation); PREP (Preparation)  
(preparation of)

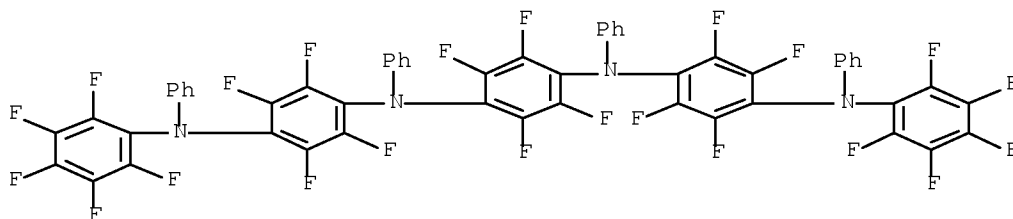
RN 4630-23-3 CAPLUS

CN 1,4-Benzenediamine, 2,3,5,6-tetrafluoro-N1-(2,3,4,5,6-pentafluorophenyl)-N1,N4-diphenyl-N4-[2,3,5,6-tetrafluoro-4-[(2,3,4,5,6-pentafluorophenyl)phenylamino]phenyl]- (CA INDEX NAME)



RN 61555-69-9 CAPLUS

CN 1,4-Benzenediamine, 2,3,5,6-tetrafluoro-N1,N4-diphenyl-N1,N4-bis[2,3,5,6-tetrafluoro-4-[(2,3,4,5,6-pentafluorophenyl)phenylamino]phenyl]- (CA INDEX NAME)



OS.CITING REF COUNT: 3 THERE ARE 3 CAPLUS RECORDS THAT CITE THIS RECORD  
(3 CITINGS)

L4 ANSWER 11 OF 11 CAPLUS COPYRIGHT 2010 ACS on STN

ACCESSION NUMBER: 1965:29481 CAPLUS Full-text

DOCUMENT NUMBER: 62:29481

ORIGINAL REFERENCE NO.: 62:5211f-h

TITLE: Synthetical applications of activated metal catalysts.  
XX. Action of degassed Raney Ni on



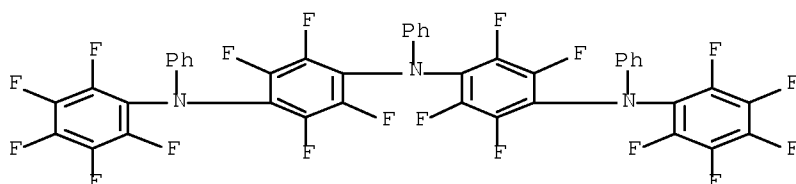
N-alkyl-o-alkylanilines  
 AUTHOR(S): Jackson, G. D. F.; Sasse, W. H. F.  
 CORPORATE SOURCE: Univ. Adelaide  
 SOURCE: Australian Journal of Chemistry (1964), 17(3), 337-46  
 CODEN: AJCHAS; ISSN: 0004-9425  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English

AB cf. CA 60, 6252b; Yeh and Kalechito, CA 55, 3588a. Several N-alkyl-o-alkylanilines were dehydrogenated with degassed Raney Ni at temps. not exceeding 230°. o-Propylaniline (I), N-methyl-o-ethylaniline (II), N-ethyl-o-toluidine (III), N-allylaniline (IV), o-ethylaniline (V), and indoline (VI) yielded complex mixts. which gave pos. Ehrlich tests. I yielded o-ethylaniline, o-toluidine, and aniline, which suggested that a stepwise degradation of the o-alkyl groups takes place. IV yielded aniline and some N-propylaniline, which indicated that N-alkyl groups are removed in one step. All the anilines gave indoles, but yields varied widely. II gave the best yield (13%), whereas III and IV yielded amts. detected only by paper chromatography. II was the only aniline to give both indole and 3-methylindole. II also was found to give all compds. (including carbazole) which so far have been identified among the products of the action of degassed Raney Ni on quinoline. It is concluded that the mechanism of the conversion of quinoline to indole and 3-methylindole proceeds by way of II.

IT 4630-23-3P, Triphenylamine,  
 2,2',3,3',5,5',6,6'-octafluoro-4,4'-bis(2,3,4,5,6-pentafluoro-N-phenylanilino)-  
 RL: PREP (Preparation)  
 (preparation of)

RN 4630-23-3 CAPLUS

CN 1,4-Benzenediamine, 2,3,5,6-tetrafluoro-N1-(2,3,4,5,6-pentafluorophenyl)-  
 N1,N4-diphenyl-N4-[2,3,5,6-tetrafluoro-4-[(2,3,4,5,6-pentafluorophenyl)phenylamino]phenyl]- (CA INDEX NAME)



=> d ibib abs hitstr 1-5

L4 ANSWER 1 OF 11 CAPLUS COPYRIGHT 2010 ACS on STN  
 ACCESSION NUMBER: 2010:1413816 CAPLUS Full-text  
 DOCUMENT NUMBER: 154:11383  
 TITLE:

Red, green, and blue electrochromism in ambipolar poly(amine-amide-imide)s based on electroactive tetraphenyl-p-phenylenediamine units

AUTHOR(S): Huang, Li-Ting; Yen, Hung-Ju; Chang, Cha-Wen; Liou, Guey-Sheng

CORPORATE SOURCE: Functional Polymeric Materials Laboratory, Institute of Polymer Science and Engineering, National Taiwan University, Taipei, 10617, Taiwan

SOURCE: Journal of Polymer Science, Part A: Polymer Chemistry  
(2010), 48(21), 4747-4757  
CODEN: JPACEC; ISSN: 0887-624X  
PUBLISHER: John Wiley & Sons, Inc.  
DOCUMENT TYPE: Journal  
LANGUAGE: English

AB A series of novel poly(amine-amide-imide)s (PAAIs) based on tetraphenyl-p-phenylenediamine (TPPA) units showing anodically/cathodically electrochromic characteristic with three primary colors [red, green, and blue (RGB)] were prepared from the direct polycondensation of the TPPA-based diamine monomer with various aromatic bis(trimellitimide)s. These multi-colored electrochromic polymers were readily soluble in polar organic solvents and showed excellent thermal stability associated with high glass-transition temps. (288-314°) and high-char yield (higher than 60% at 800° in nitrogen). The PAAI films revealed electrochem. oxidation and reduction accompanied with high contrast of optical transmittance color changes from the pale yellow neutral state to the green/blue oxidized state and red reduced state, resp. The electrochromic films had high-coloration efficiency (CE = 178 and 242 Cm<sup>2</sup>/C at the first and the second stages, resp.), low-switching time, and good redox stability, which still retained a high electroactivity after long-term redox cycles.

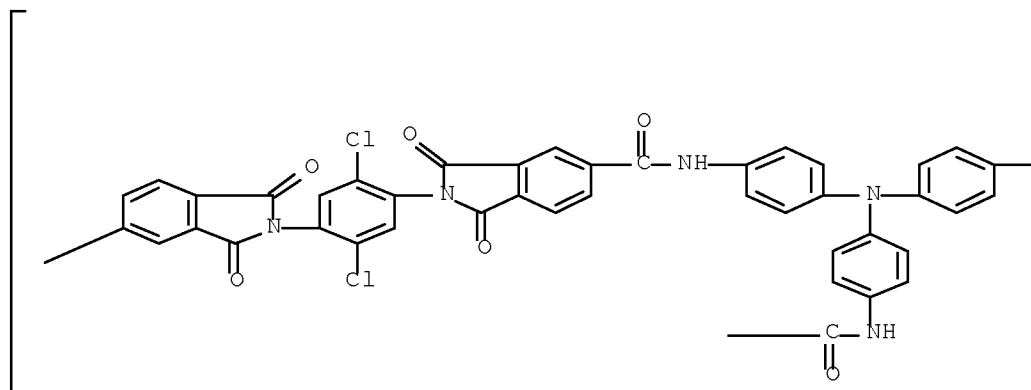
IT 1256599-75-3P

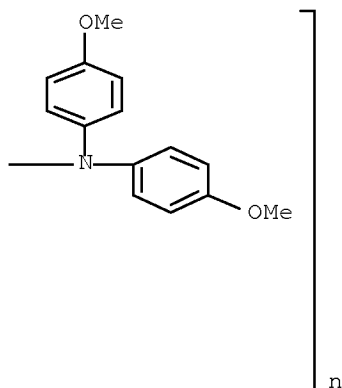
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)  
(red, green, and blue electrochromism in ambipolar  
poly(amine-amide-imide)s based on electroactive  
tetraphenyl-p-phenylenediamine units)

RN 1256599-75-3 CAPLUS

CN INDEX NAME NOT YET ASSIGNED

PAGE 1-A





REFERENCE COUNT: 61 THERE ARE 61 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L4 ANSWER 2 OF 11 CAPLUS COPYRIGHT 2010 ACS on STN

ACCESSION NUMBER: 2006:598624 CAPLUS Full-text

DOCUMENT NUMBER: 145:211587

TITLE: Electrochromic properties of novel strictly alternating poly(amine-amide-imide)s with electroactive triphenylamine moieties

AUTHOR(S): Liou, Guey-Sheng; Hsiao, Sheng-Huei; Fang, Yi-Kai

CORPORATE SOURCE: Department of Applied Chemistry, National Chi Nan University, Nantou Hsien, 545, Taiwan

SOURCE: European Polymer Journal (2006), 42(7), 1533-1540

CODEN: EUPJAG; ISSN: 0014-3057

PUBLISHER: Elsevier Ltd.

DOCUMENT TYPE: Journal

LANGUAGE: English

AB A series of novel triphenylamine-containing aromatic poly(amine-amide-imide)s (PAAIs) were prepared by the phosphorylation polyamidation reactions from the diamine, N,N'-bis(4-aminophenyl)-N,N'-diphenyl-1,4-phenylenediamine, and various imide ring-preformed dicarboxylic acids. All the PAAIs were amorphous, had good solubility in many polar aprotic solvents, and exhibited excellent thin film forming capability with good mech. properties. They displayed relatively high glass-transition temps. (220-306 °C) and good thermal stability, with 10% weight-loss temps. in excess of 522 °C in air or nitrogen and char yields at 800 °C in nitrogen higher than 66%. The solns. of polymers in NMP exhibited strong UV-vis absorption bands with a maximum around 315 nm. The hole-transporting and electrochromic properties were examined by electrochem. and spectroelectrochem. methods. Cyclic voltammograms of the PAAIs prepared by casting polymer solution onto an indium-tin oxide (ITO)-coated glass substrate exhibited two reversible oxidation redox couples at 0.63 and 1.01 V vs. Ag/AgCl in acetonitrile solution. All the PAAIs revealed very stable electrochromic characteristics, changing color from original pale brownish to green, and then to blue at 0.67 and 1.08 V, resp.

IT 577746-63-5

RL: PRP (Properties)

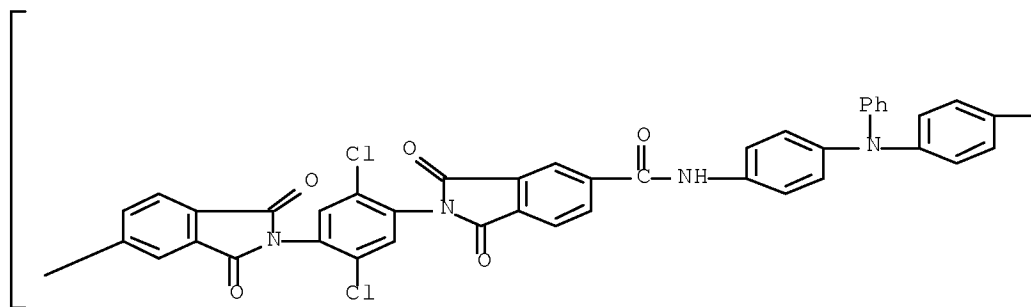
(electrochromic properties of poly(amine-amide-imide)s with electroactive triphenylamine moieties)

RN 577746-63-5 CAPLUS

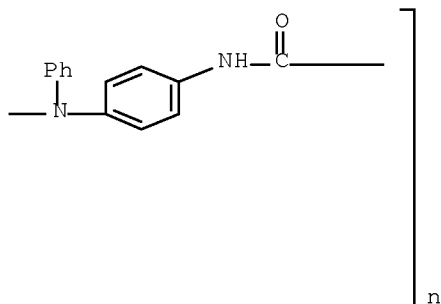
CN Poly[(1,3-dihydro-1,3-dioxo-2H-isoindole-5,2-diyl)(2,5-dichloro-1,4-phenylene)(1,3-dihydro-1,3-dioxo-2H-isoindole-2,5-diyl)carbonylimino-1,4-

phenylene(phenylimino)-1,4-phenylene(phenylimino)-1,4-phenyleneiminocarbonyl] (9CI) (CA INDEX NAME)

PAGE 1-A



PAGE 1-B



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OS.CITING REF COUNT:      5      THERE ARE 5 CAPLUS RECORDS THAT CITE THIS RECORD
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REFERENCE COUNT:          40      THERE ARE 40 CITED REFERENCES AVAILABLE FOR THIS
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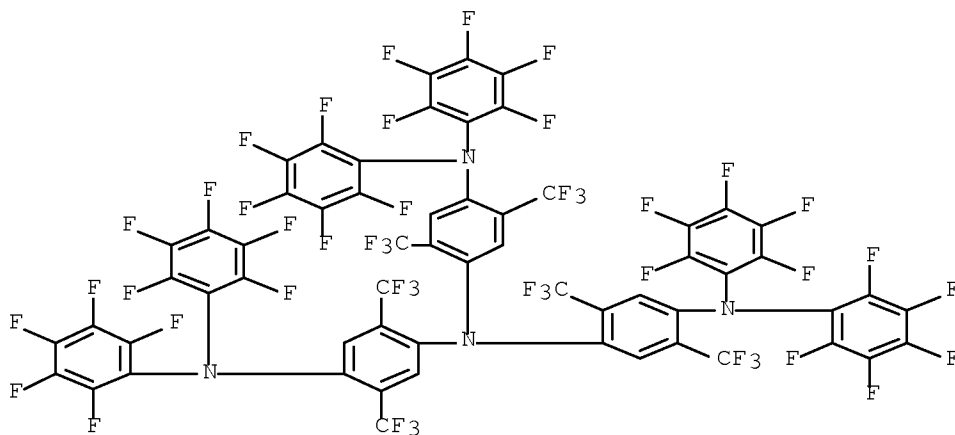
L4 ANSWER 3 OF 11 CAPLUS COPYRIGHT 2010 ACS on STN  
ACCESSION NUMBER: 2005:35085 CAPLUS Full-text  
DOCUMENT NUMBER: 142:102910  
TITLE: Organic electroluminescent device, illuminating  
device, and display  
INVENTOR(S): Oshiyama, Tomohiro; Kita, Hiroshi; Katoh, Eisaku  
PATENT ASSIGNEE(S): Konica Minolta Holding, Inc., Japan  
SOURCE: PCT Int. Appl., 80 pp.  
CODEN: PIXXD2  
DOCUMENT TYPE: Patent  
LANGUAGE: Japanese  
FAMILY ACC. NUM. COUNT: 1  
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
1000000	A	1990-01-01	1000000	1990-01-01
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1000004	A	1990-01-01	1000004	1990-01-01
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WO 2005004549 A1 20050113 WO 2004-JP9391 20040625  
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RW: BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG  
EP 1651013 A1 20060426 EP 2004-746860 20040625  
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, PL, SK, HR  
CN 1817066 A 20060809 CN 2004-80019019 20040625  
CN 100556224 C 20091028  
US 20070099025 A1 20070503 US 2005-562652 20051227  
US 7371469 B2 20080513  
US 20080233431 A1 20080925 US 2008-82251 20080410  
PRIORITY APPLN. INFO.: JP 2003-193519 A 20030708  
WO 2004-JP9391 W 20040625  
US 2005-562652 A3 20051227

ASSIGNMENT HISTORY FOR US PATENT AVAILABLE IN LSUS DISPLAY FORMAT

AB An organic electroluminescent device comprising at least a light-emitting layer containing a phosphorescent compound between an anode and a cathode is characterized by comprising an adjoining layer so arranged between the light-emitting layer and the cathode as to be adjacent to the light-emitting layer and containing a compound with an electron-withdrawing group having an HOMO at -5.7 eV to -7.0 eV and an LUMO at -1.3 eV to -2.3 eV.  
IT ~~817638-42-9~~  
RL: DEV (Device component use); USES (Uses)  
(organic electroluminescent device, illumination apparatus and display)  
RN 817638-42-9 CAPLUS  
CN 1,4-Benzenediamine, N1,N1-bis[4-[bis(2,3,4,5,6-pentafluorophenyl)amino]-2,5-bis(trifluoromethyl)phenyl]-N4,N4-bis(2,3,4,5,6-pentafluorophenyl)-2,5-bis(trifluoromethyl)- (CA INDEX NAME)



OS.CITING REF COUNT: 1 THERE ARE 1 CAPLUS RECORDS THAT CITE THIS RECORD  
(1 CITINGS)

REFERENCE COUNT: 6 THERE ARE 6 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L4 ANSWER 4 OF 11 CAPLUS COPYRIGHT 2010 ACS on STN  
ACCESSION NUMBER: 2004:609956 CAPLUS Full-text  
DOCUMENT NUMBER: 141:164924  
TITLE: Molecular chemical compounds for emitting photoluminescent radiation, and photoluminescence quenching device employing the same  
INVENTOR(S): Redecker, Michael  
PATENT ASSIGNEE(S): Samsung SDI Co., Ltd., S. Korea  
SOURCE: U.S. Pat. Appl. Publ., 15 pp.  
CODEN: USXXCO  
DOCUMENT TYPE: Patent  
LANGUAGE: English  
FAMILY ACC. NUM. COUNT: 1  
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 20040147701	A1	20040729	US 2003-727642	20031205
US 7402343	B2	20080722		
EP 1443093	A1	20040804	EP 2003-90022	20030129
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, SK				
KR 2004069942	A	20040806	KR 2003-59486	20030827
CN 1519235	A	20040811	CN 2003-10114718	20031231
JP 2004339190	A	20041202	JP 2004-7343	20040114
PRIORITY APPLN. INFO.:			EP 2003-90022	A 20030129
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ASSIGNMENT HISTORY FOR US PATENT AVAILABLE IN LSUS DISPLAY FORMAT

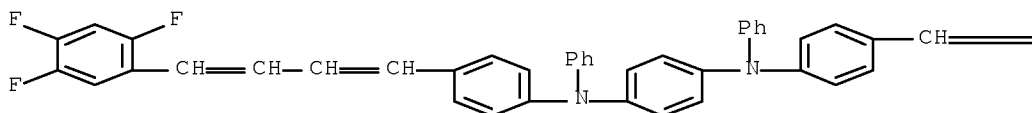
AB A chemical compound has an electron donor group, an electron acceptor group, and a conjugated bridging element bridging between the electron donor group and the electron acceptor group. The chemical compound has a readily displaceable electron, is capable of emitting photoluminescent radiation. A dipole character is present therein only in the excited state of the compound. The compds. are suitable for use in optical devices and, particularly, can be used for photoluminescence quenching devices.

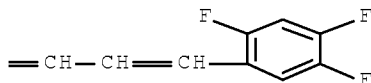
IT 728915-87-5 728915-91-1  
RL: TEM (Technical or engineered material use); USES (Uses)  
(mol. chemical compds. for emitting photoluminescent radiation for photoluminescence quenching device)

RN 728915-87-5 CAPLUS

CN 1,4-Benzenediamine, N1,N4-diphenyl-N1,N4-bis[4-[4-(2,4,5-trifluorophenyl)-1,3-butadien-1-yl]phenyl]- (CA INDEX NAME)

PAGE 1-A





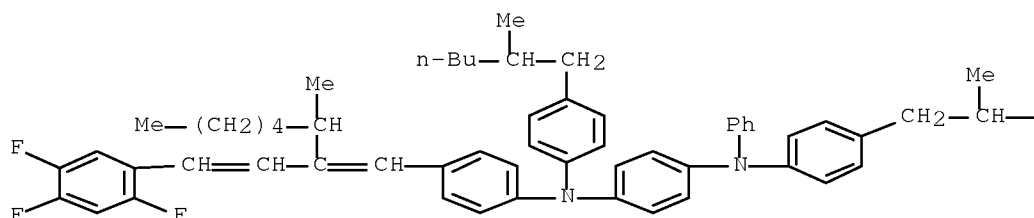
RN 728915-91-1 CAPLUS

CN 1,4-Benzenediamine, N,N'-bis[4-(2-methylhexyl)phenyl]-N-[4-[3-methyl-2-[2-(2,4,5-trifluorophenyl)ethenyl]-1-octenyl]phenyl]-N'-phenyl-, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 728915-90-0

CMF C61 H71 F3 N2



—Bu-n

OS.CITING REF COUNT: 2 THERE ARE 2 CAPLUS RECORDS THAT CITE THIS RECORD (4 CITINGS)

REFERENCE COUNT: 24 THERE ARE 24 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L4 ANSWER 5 OF 11 CAPLUS COPYRIGHT 2010 ACS on STN

ACCESSION NUMBER: 2003:868360 CAPLUS Full-text

DOCUMENT NUMBER: 139:371610

TITLE: Organic electroluminescent materials and devices having high luminescent efficiency and color purity

INVENTOR(S): Funabashi, Masakazu; Iwakuma, Toshihiro; Hosokawa, Chishio

PATENT ASSIGNEE(S): Idemitsu Kosan Co., Ltd., Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 13 pp.

CODEN: JKXXAF

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2003313547	A	20031106	JP 2002-116935	20020419
PRIORITY APPLN. INFO.:			JP 2002-116935	20020419

OTHER SOURCE(S): MARPAT 139:371610

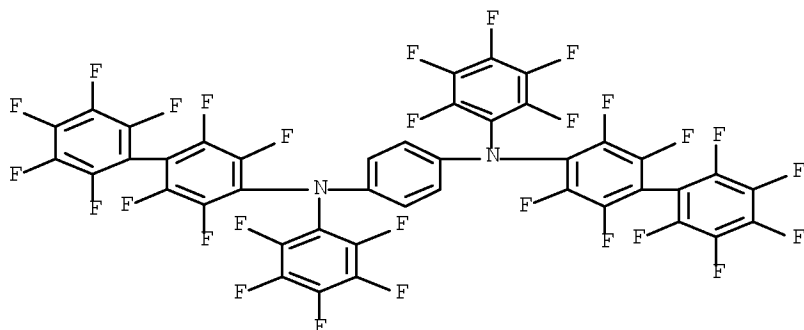
AB The materials are Ar1(NAr4Ar6)n(NAr5Ar7)mNAr2Ar3 [n= 1-3; m = 0-2; Ar1-Ar3, Ar6, Ar7 = 1,2-, 1,3-, or 1,4-(perfluoro)phenyl (structures given); ≥1 of Ar1-Ar3, Ar6, Ar7 = perfluorophenyl; Ar4, Ar5 = 1,2-, 1,3-, or 1,4-(perfluoro)phenylene (structures given); Ar4 and/or Ar5 = perfluorophenylene]. The devices, preferably blue-emitting, contain the materials as host materials in emitter layers and are useful as light sources for elec. apparatus

IT 620607-81-0P 620607-86-5P

RL: DEV (Device component use); IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses) (fluorophenylamines as host materials in emitter layers in organic electroluminescent devices)

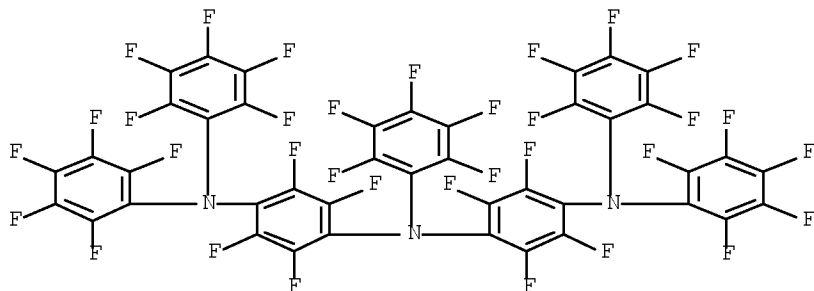
RN 620607-81-0 CAPLUS

CN 1,4-Benzenediamine, N1,N4-bis(2,2',3,3',4',5,5',6,6'-nonafluoro[1,1'-biphenyl]-4-yl)-N1,N4-bis(2,3,4,5,6-pentafluorophenyl)- (CA INDEX NAME)



RN 620607-86-5 CAPLUS

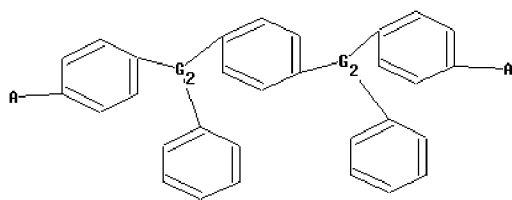
CN 1,4-Benzenediamine, N1-[4-[bis(2,3,4,5,6-pentafluorophenyl)amino]-2,3,5,6-tetrafluorophenyl]-2,3,5,6-tetrafluoro-N1,N4,N4-tris(2,3,4,5,6-pentafluorophenyl)- (CA INDEX NAME)



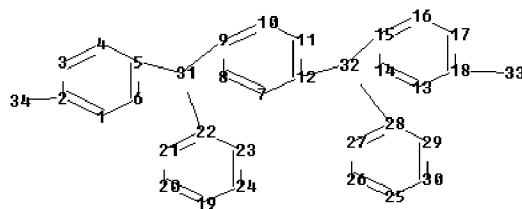
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G<sub>2</sub>-Hy-G<sub>2</sub>



42-39-48

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chain nodes :
31 32 33 34 39 40 42
ring nodes :
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23
24 25 26 27 28 29 30
chain bonds :
2-34 5-31 9-31 12-32 15-32 18-33 22-31 28-32 39-40 39-42
ring bonds :
1-2 1-6 2-3 3-4 4-5 5-6 7-8 7-12 8-9 9-10 10-11 11-12 13-14 13-18 14-
15
15-16 16-17 17-18 19-20 19-24 20-21 21-22 22-23 23-24 25-26 25-30 26-27
27-28 28-29
29-30
exact/norm bonds :
2-34 5-31 9-31 12-32 15-32 18-33 22-31 28-32 39-40 39-42
normalized bonds :
1-2 1-6 2-3 3-4 4-5 5-6 7-8 7-12 8-9 9-10 10-11 11-12 13-14 13-18 14-
15
15-16 16-17 17-18 19-20 19-24 20-21 21-22 22-23 23-24 25-26 25-30 26-27
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29-30
isolated ring systems :
containing 1 : 7 : 13 : 19 : 25 :

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G1: Ak, H

G2: N, P

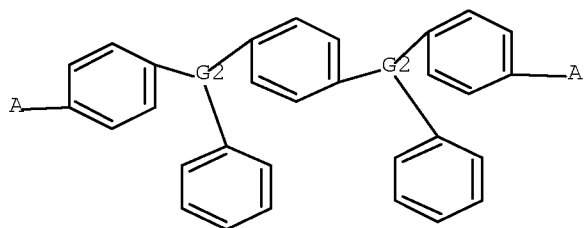
G3: B, X

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Match level :
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11:Atom 12:Atom 13:Atom 14:Atom 15:Atom 16:Atom 17:Atom 18:Atom 19:Atom
20:Atom 21:Atom
22:Atom 23:Atom 24:Atom 25:Atom 26:Atom 27:Atom 28:Atom 29:Atom 30:Atom
31:CLASS 32:CLASS
33:CLASS 34:CLASS 39:Atom 40:CLASS 42:CLASS
Generic attributes :
39:
Saturation : Unsaturated

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G3-Hy-G3

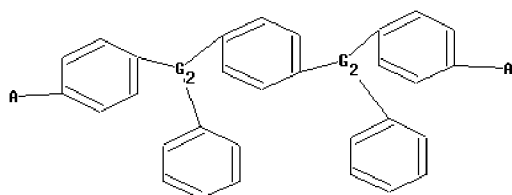
G3-Cy-G3

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 G2 N,P  
 G3 B,X

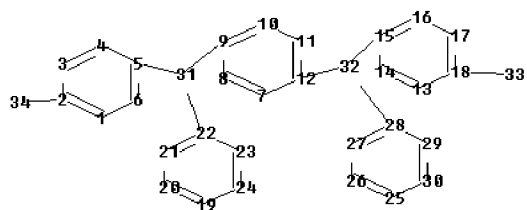
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G<sub>2</sub>-Hy-G<sub>2</sub>



42-39-40

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31 32 33 34 39 40 42

ring nodes :

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23  
 24 25 26 27 28 29 30

chain bonds :

2-34 5-31 9-31 12-32 15-32 18-33 22-31 28-32 39-40 39-42

ring bonds :

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 27-28 28-29  
 29-30

exact/norm bonds :  
 2-34 5-31 9-31 12-32 15-32 18-33 22-31 28-32 39-40 39-42  
 normalized bonds :  
 1-2 1-6 2-3 3-4 4-5 5-6 7-8 7-12 8-9 9-10 10-11 11-12 13-14 13-18 14-15  
 15-16 16-17 17-18 19-20 19-24 20-21 21-22 22-23 23-24 25-26 25-30 26-27  
 27-28 28-29  
 29-30  
 isolated ring systems :  
 containing 1 : 7 : 13 : 19 : 25 :

G1: Ak, H

G2: N, P

G3: B, X

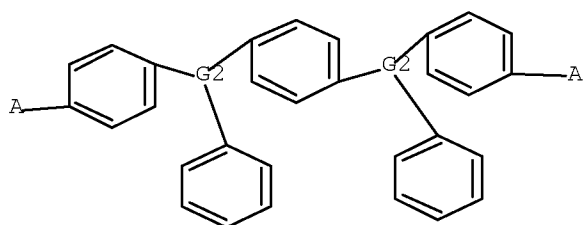
Match level :  
 1:Atom 2:Atom 3:Atom 4:Atom 5:Atom 6:Atom 7:Atom 8:Atom 9:Atom 10:Atom  
 11:Atom 12:Atom 13:Atom 14:Atom 15:Atom 16:Atom 17:Atom 18:Atom 19:Atom  
 20:Atom 21:Atom  
 22:Atom 23:Atom 24:Atom 25:Atom 26:Atom 27:Atom 28:Atom 29:Atom 30:Atom  
 31:CLASS 32:CLASS  
 33:CLASS 34:CLASS 39:Atom 40:CLASS 42:CLASS  
 Generic attributes :  
 39:  
 Saturation : Unsaturated

L2 STRUCTURE UPLOADED

=> d 12

L2 HAS NO ANSWERS

L2 STR



G3-Hy-G3

G1 Ak, H

G2 N, P

G3 B, X

Structure attributes must be viewed using STN Express query preparation.

=> s 12

SAMPLE SEARCH INITIATED 12:52:09 FILE 'REGISTRY'

SAMPLE SCREEN SEARCH COMPLETED - 11338 TO ITERATE

100.0% PROCESSED 11338 ITERATIONS

0 ANSWERS

SEARCH TIME: 00.00.01

FULL FILE PROJECTIONS: ONLINE \*\*COMPLETE\*\*

BATCH \*\*COMPLETE\*\*

PROJECTED ITERATIONS: 220378 TO 233142

PROJECTED ANSWERS: 0 TO 0

L3 0 SEA SSS SAM L2

=> s 12 full

FULL SEARCH INITIATED 12:52:20 FILE 'REGISTRY'

FULL SCREEN SEARCH COMPLETED - 228780 TO ITERATE

100.0% PROCESSED 228780 ITERATIONS

3 ANSWERS

SEARCH TIME: 00.00.01

L4 3 SEA SSS FUL L2

This file contains CAS Registry Numbers for easy and accurate substance identification.

=> s 14

L5 2 L4

=> d ibib abs hitstr 1-2

L5 ANSWER 1 OF 2 CAPLUS COPYRIGHT 2011 ACS on STN

ACCESSION NUMBER: 2010:1527402 CAPLUS Full-text

DOCUMENT NUMBER: 154:114338

TITLE: Accumulative charge separation inspired by photosynthesis

AUTHOR(S): Karlsson, Susanne; Boixel, Julien; Pellegrin, Yann; Blart, Errol; Becker, Hans-Christian; Odobel, Fabrice; Hammarstroem, Leif

CORPORATE SOURCE: Department of Photochemistry and Molecular Science, Uppsala University, Uppsala, SE-751 20, Swed.

SOURCE: Journal of the American Chemical Society (2010), 132(51), 17977-17979

CODEN: JACSAT; ISSN: 0002-7863

PUBLISHER: American Chemical Society

DOCUMENT TYPE: Journal; (online computer file)

LANGUAGE: English

AB Mol. systems that follow the functional principles of photosynthesis have attracted increasing attention as a method for the direct production of solar fuels. This could give a major carbon-neutral energy contribution to our future society. An outstanding challenge in this research is to couple the light-induced charge separation (which generates a single electron-hole pair) to the multielectron processes of water oxidation and fuel generation. New design considerations are needed to allow for several cycles of photon absorption and charge separation of a single artificial photosystem. Here we demonstrate a mol. system with a regenerative photosensitizer that shows two successive events of light-induced charge separation, leading to high-yield

accumulation of redox equivalent on single components without sacrificial agents.

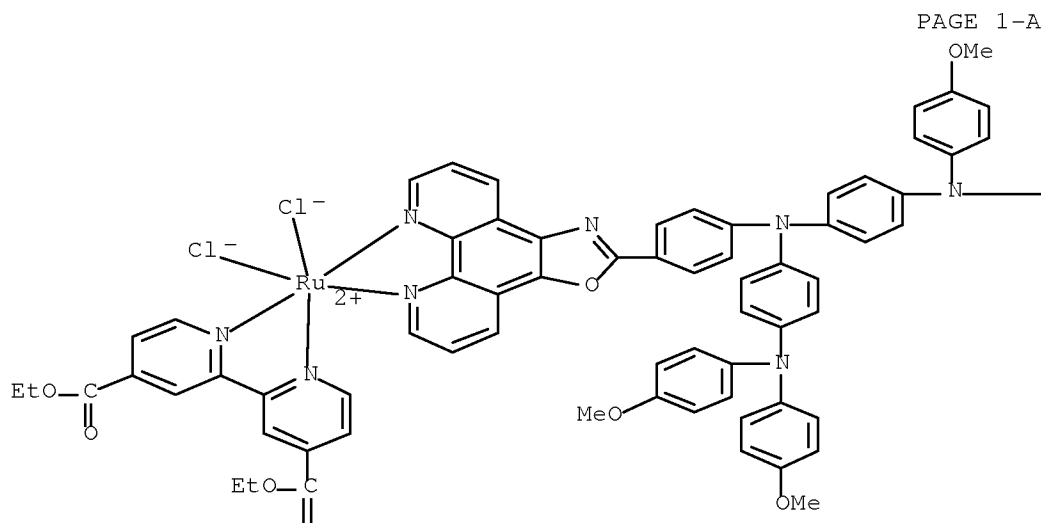
IT 1260429-14-8P

RL: PRP (Properties); RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)

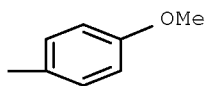
(synthesis and reaction of, with potassiumcyanide; accumulative charge separation inspired by photosynthesis)

RN 1260429-14-8 CAPLUS

CN INDEX NAME NOT YET ASSIGNED



PAGE 1-B



PAGE 2-A



REFERENCE COUNT: 35 THERE ARE 35 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L5 ANSWER 2 OF 2 CAPLUS COPYRIGHT 2011 ACS on STN  
ACCESSION NUMBER: 2006:1354282 CAPLUS Full-text

DOCUMENT NUMBER: 146:101958  
 TITLE: Polymer materials with good charge injection and transporting properties and luminescent efficiency for light emitting devices  
 INVENTOR(S): Nakatani, Tomoya; Yamada, Takeshi  
 PATENT ASSIGNEE(S): Sumitomo Chemical Company, Limited, Japan  
 SOURCE: PCT Int. Appl., 151pp.  
 CODEN: PIXXD2  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Japanese  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2006137436	A1	20061228	WO 2006-JP312406	20060621
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HN, HR, HU, ID, IL, IN, IS, KE, KG, KM, KN, KP, KR, KZ, LA, LC, LK, LR, LS, LT, LU, LV, LY, MA, MD, MG, MK, MN, MW, MX, ME, NA, NG, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RS, RU, SC, SD, SE, SG, SK, SL, SM, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, ZA, ZM, ZW RW: AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, LV, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG, BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
JP 2007031705	A	20070208	JP 2006-170885	20060621
GB 2442656	A	20080409	GB 2008-1069	20060621
GB 2442656	B	20091223		
DE 112006001679	T5	20080515	DE 2006-112006001679	20060621
CN 101198633	A	20080611	CN 2006-80021855	20071218
KR 2008020635	A	20080305	KR 2007-7029883	20071221
US 20100084965	A1	20100408	US 2007-993660	20071221
PRIORITY APPLN. INFO.:			JP 2005-182276	A 20050622
			WO 2006-JP312406	W 20060621

ASSIGNMENT HISTORY FOR US PATENT AVAILABLE IN LSUS DISPLAY FORMAT  
 GI

\* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT \*

AB Title luminescent or charge-transporting polymer compds. have a main chain containing a divalent heterocyclic group, a divalent condensed polycyclic hydrocarbon group including no five-membered ring, a group I or a divalent aromatic amine group as a repeating unit, and a functional side chain containing  $\geq 1$  functional group selected from hole injecting/transporting groups, electron injecting/transporting groups, and light-emitting groups, wherein ring A, ring B = independently (un)substituted aromatic hydrocarbon ring (A  $\neq$  B) and Rw, Rx = independently H or substituent (Rw and Rx may combine together to form a ring). The functional group is directly bonded to a saturated carbon atom in the repeating unit or bonded to the repeating unit via X in an RJX group (RJ = (un)substituted alkylene group and X = direct bond, O, S, C(:O)O, S(:O), SiR8R9, NR10, BR11, PR12 or P(:O)R13). Thus, 30 mmol N-phenyl-1,4-phenylenediamine and 120 mmol 4-bromo-butylbenzene were reacted, and treated with N-bromosuccinimide to give N1-(4-bromophenyl)-N1,N4,N4-tris(4-butylphenyl)-1,4-benzenediamine, 4.0 mmol of which was reacted

with 10 mmol 8-bromooctene in the presence of 9-borabicyclo[3.3.1]nonane and palladium complex catalyst, 2.1 equiv the resulting N1-[4-(8-bromooctyl)phenyl]-N1,N4,N4-tris(4-butylphenyl)-1,4- benzenediamine was reacted with 1 equiv 3,7-dibromo-2,8-dibenzofurandiol to give a monomer II, which was polymerized in the presence of 2,2'-bipyridyl and bis(1,5-cyclooctadiene)nickel at 60° for 3 h to give a homopolymer, showing electroluminescence at 440 nm when fabricated into an electroluminescent element.

IT 917376-15-9P

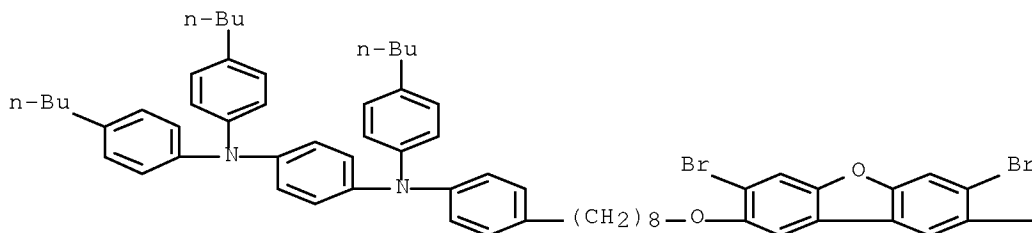
RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)

(monomer; preparation of polymer materials with good charge injection and transporting properties and luminescent efficiency for light emitting devices)

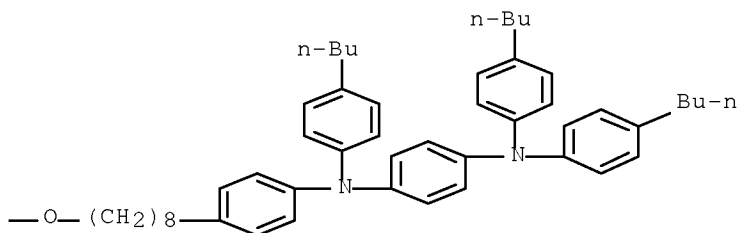
RN 917376-15-9 CAPLUS

CN 1,4-Benzenediamine, N1,N1'-[(3,7-dibromo-2,8-dibenzofurandiyl)bis(oxy-8,1-octanediyl-4,1-phenylene)]bis[N1,N4,N4-tris(4-butylphenyl)- (CA INDEX NAME)

PAGE 1-A



PAGE 1-B



IT 917376-18-2P

RL: IMF (Industrial manufacture); PRP (Properties); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)

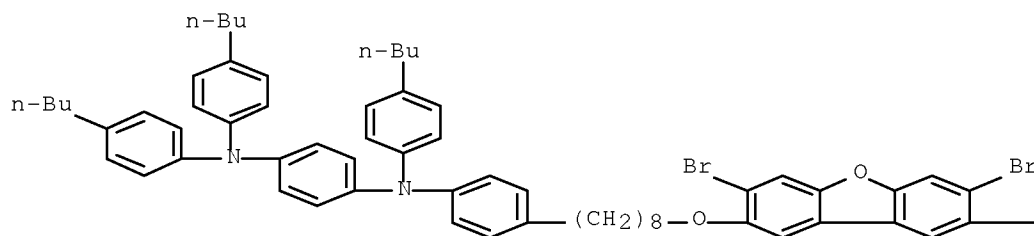
(preparation of polymer materials with good charge injection and transporting properties and luminescent efficiency for light emitting devices)

RN 917376-18-2 CAPLUS

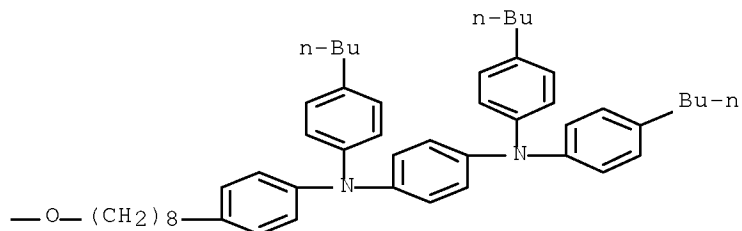
CN 1,4-Benzenediamine, N1,N1'-[(3,7-dibromo-2,8-dibenzofurandiyl)bis(oxy-8,1-octanediyl-4,1-phenylene)]bis[N1,N4,N4-tris(4-butylphenyl)-, homopolymer (CA INDEX NAME)

CRN 917376-15-9  
CMF C112 H130 Br2 N4 O3

PAGE 1-A



PAGE 1-B



REFERENCE COUNT:

20

THERE ARE 20 CITED REFERENCES AVAILABLE FOR THIS  
RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT